

# Marine Fisheries Census 2016



# India



**Department of Fisheries**  
Ministry of Fisheries, Animal Husbandry and Dairying, Govt. of India

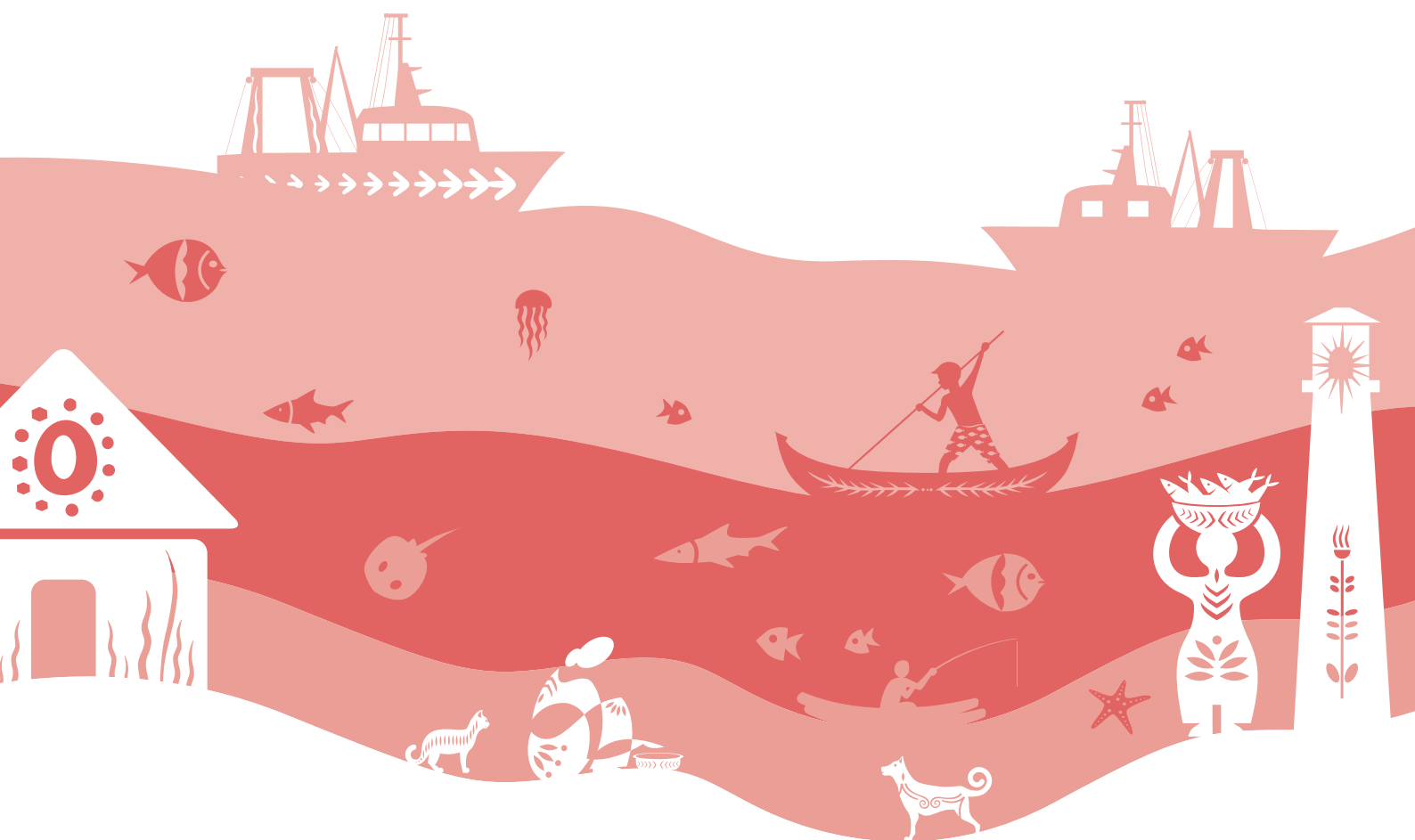


**Central Marine Fisheries Research Institute**  
Indian Council of Agricultural Research



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**Department of Fisheries**  
Ministry of Fisheries, Animal Husbandry and Dairying, Govt. of India



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Indian Council of Agricultural Research



## Marine Fisheries Census 2016 **India**

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गिरिराज सिंह  
GIRIRAJ SINGH



मत्स्यपालन, पशुपालन और डेयरी मंत्री  
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MINISTER OF FISHERIES, ANIMAL  
HUSBANDRY & DAIRYING  
GOVERNMENT OF INDIA  
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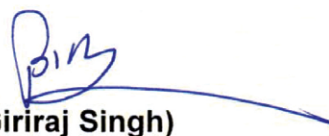


## Message

The marine fisheries sector of India supports the livelihood of nearly four million people residing along the Indian coast by providing direct employment through fishing to nearly one million fishermen and an equal number of people through allied activities. The sector generates vital foreign exchange for the country through export earnings. Besides this, marine fish is an important food resource and to fulfill the nutritional requirements of consumers. Technological advances over years in the sector such as introduction of efficient fishing crafts and gears, enhanced storage and transport facilities, modern communication devices etc. have resulted in increasing the production and value by manifold. Marine fish production from Indian seas had reached an all-time high of 3.94 million tonnes in 2012, while the revised estimated potential from the Indian EEZ is 5.31 million tonnes.

Effective management of highly diverse marine fishery resources is the key for sustained marine fish production from our seas. For this, in addition to the estimation of quantity of the resource harvested from the sea, additional information on number of active fishermen, total fishermen population, fishing crafts and gears, infrastructural facilities for marketing, processing and export etc. prevailing in the marine fisheries sector should be known and updated periodically. This is necessary for planning developmental activities associated with the marine fisheries sector and to develop suitable management practices.

It gives me immense pleasure to know that the newly created Department of Fisheries, under the Ministry of Fisheries, Animal Husbandry & Dairying has a component of its central sector scheme on "Development of Database and GIS for the Fisheries sector" and conducted the marine fisheries census for the third time in 2016 through the Central Marine Fisheries Research Institute (CMFRI) covering all the maritime states in the mainland and Fishery Survey of India (FSI) covering the Lakshadweep and Andaman & Nicobar Islands to generate data and update information on fishermen population, infrastructure facilities, fishing crafts, fishing gears etc. I appreciate the sincere and dedicated effort of CMFRI and FSI in the conduct of the marine fisheries census in 2016 and for bringing out the results as publications. The information generated through this census will better equip the planners, administrators, stakeholders and researchers for the overall development of the marine fisheries sector.

  
(Giriraj Singh)



प्रताप चन्द्र षडङ्गी  
ପ୍ରତାପ ଚନ୍ଦ୍ର ଷଡ଼ଙ୍ଗୀ  
Pratap Chandra Sarangi



राज्य मंत्री  
सूक्ष्म, लघु और मध्यम उद्यम और  
मत्स्यपालन, पशुपालन एवं डेयरी  
भारत सरकार  
नई दिल्ली - ११००११



MINISTER OF STATE FOR  
MICRO, SMALL & MEDIUM ENTERPRISES AND  
FISHERIES, ANIMAL HUSBANDRY & DAIRYING  
GOVERNMENT OF INDIA  
NEW DELHI-110011



## Message

I am happy to know that the Marine Fisheries Census has been completed for the third time through the Central Marine Fisheries Research Institute (CMFRI) covering all the maritime states in the mainland and Fishery Survey of India (FSI) covering the Lakshadweep and Andaman & Nicobar Islands under the component of its central sector scheme on "Development of Database and GIS for the Fisheries Sector." My greetings to the entire team of CMFRI and FSI for this laudable work.

India is endowed with a wide diversity of water resources, which sustain a large fisheries sector in the country. The marine sub-sector accounts for approximately 30 per cent of the total national fish production of 12.59 million tones (2017), while inland fishing accounts for 70 per cent of total fish production. In addition to accounting for approximately one per cent of the national Gross Domestic Product (GDP), the marine fishing sub-sector also forms an important component of the rural coastal economy. It generates income and provides livelihood opportunities and food security to an estimated 3.77 million people in over 3,477 villages along the country's vast coastline, who depend on fishing for their livelihoods. Close to 100 per cent of working people in these small coastal communities are engaged in marine fisheries-related livelihoods. Nearly half are involved full-time in marine fishing and related work such as processing and trade. The majority of coastal fishermen are small-scale operators, fishing in inshore waters.

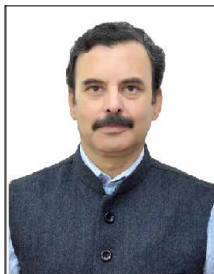
Given the immense importance of the marine fisheries sector for the country's economic development, I hope that the Marine Fisheries Census would be helpful to all the stakeholders of the sector - policy makers, researchers, traders, consumers and above all the marine fishermen.

(Pratap Chandra Sarangi)





डॉ. राजीव रंजन आईएएस  
सचिव  
**Dr. Rajeev Ranjan, IAS**  
Secretary



मत्स्यपालन, पशुपालन, एवं डेयरी मंत्रालय  
मत्स्यपालन विभाग  
कृषि भवन, नई दिल्ली-110001  
**Ministry of Fisheries,**  
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## Foreword

In India, the fisheries sector contributes more than 1% to the nation's GDP and provides employment directly and indirectly to more than twenty seven million fishers. The country earned foreign exchange of Rs. 45,107 crores in 2017-18, by exporting 13,77,244 metric tonnes of marine fish products to nearly 100 countries. This accounts for around 10% of the total exports and nearly 20% of the agricultural exports from the country.

The marine fisheries sector has undergone substantial changes over decades. Increased mechanization, improved gear materials, motorization of country crafts, modification of fishing gears, expansion of fishing grounds, voyage fishing and increased storage facilities had significant effect on increasing production from the marine fisheries sector. Modern communication systems, global positioning systems, forecast of potential fishery zones through remote sensing *etc.* improved the efficiency of fishing vessels.

An information system with data on various aspects of marine fisheries such as fishing villages, landing centres, fisheries harbours, fishermen population, active fishermen, educational status of fisher population, fishing crafts and gears in the fishery, existing infrastructural facilities in fishing villages *etc.* is very much necessary for formulating short and long term development plans for the marine fisheries sector in each maritime state and union territory in the country.

To have updated information on all aspects of marine fisheries it is necessary to have a census on marine fisheries at least once in every five years. The ICAR - Central Marine Fisheries Research Institute (ICAR-CMFRI) and Fishery Survey of India (FSI) had efficiently conducted census on marine fisheries for the maritime states in the main land and Islands respectively in 2005 and 2010 under financial support from the Department of Fisheries under its central sector scheme "Development of Database and GIS for the marine fisheries sector". The third marine fisheries census under this scheme was successfully conducted by ICAR-CMFRI and FSI in 2016.

The marine fisheries census was conducted during a period of 30 days starting 01<sup>st</sup> February to 01<sup>st</sup> March 2016 by ICAR-CMFRI in all, the nine maritime states and union territories of Puducherry, Daman and Diu. The census was conducted by FSI for Lakshadweep and Andaman & Nicobar Islands during the same period. I have great pleasure in expressing my sincere thanks to all the officers and staff of ICAR-CMFRI and FSI for conducting the Marine Fisheries Census 2016, especially the Fishery Resources Assessment Division of ICAR-CMFRI which had the overall responsibility of conducting the census, processing the information and bringing out the reports. Also, I take this opportunity to express my thanks to the offices of all maritime states and Union Territories for their support during the census. However, the data could not be published in a book form then and that is being remedied by bringing it out now.

I hope that the information generated through this census will be very much useful for planners, policy makers, researchers and others for the development of the marine fisheries sector of the country.

*R. Ranjan*  
8/6/2020  
(Dr. Rajeev Ranjan)





त्रिलोचन महापात्र, पीएच.डी.

सचिव, एवं महानिदेशक

**TRILOCHAN MOHAPATRA, Ph.D.**  
SECRETARY & DIRECTOR GENERAL



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## Foreword

Marine Fisheries resources of India are “bounties of sea” for providing nutritional, food and socio-economic and livelihood security to nearly four million fisher populations along the coast. In spite of the growth of India’s fisheries sector, recent years have witnessed a drawback in fish production, with either levelling or declining catches or even extinction of some of the resources. Thus, management of the fish stocks based on advisories derived from scientific data collection and analysis of fish stocks is very much essential for maintaining harvest at sustainable levels in order to ensure its availability for future generations. The quantity of different species of fish and shell fish resources harvested annually from Indian waters is one of the critical inputs required for fish stock assessment. Information on social and educational status of fisher folks, infrastructure facilities, types of fishing crafts and fishing gears etc. are important for management of the fisheries sector. This information is generally collected through marine fisheries census covering all the marine fishing villages along the entire coast of the country.

ICAR - Central Marine Fisheries Research Institute (CMFRI) was involved in the first marine fisheries census in 1980 which was subsequently carried out in 2005 and 2010 jointly with Department of Fisheries, Government of India (erstwhile Department of Animal Husbandry Dairying and Fisheries) and was further continued in 2016. It gives me immense pleasure that the marine fisheries census 2016 is ready in the form of 15 reports; one each for the 9 maritime states; two union territories, one each for Lakshadweep and Andaman & Nicobar Islands and one consolidated report for entire India.

I appreciate ICAR-CMFRI and Fishery Survey of India for their sincere efforts for accomplishing this massive task. The reports will be of immense use to planners for implementing developmental activities and researchers working in the field of marine fisheries.

  
(T. MOHAPATRA)







**डॉ. जे.के. जेना**

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## Message

The marine fisheries sector of India has been playing a vital role in National Economy in terms of food, nutrition and livelihood to a large section of population. Presently, marine fish catches hovering close to the revalidated potential indicate that the fishing pressure is more or less close to the Maximum Sustainable Yield (MSY).

Fishermen combat falling catches with technological/operational enhancement to increase economic viability of operations which may or may not be sustainable. On the other hand, fishing villages along the coast line are highly vulnerable to various anthropogenic and natural pressures including the inevitable impacts of climate change. Thus, the marine fishermen community of India is facing a large number of challenges. There is a need to properly assess the societal cross-section of marine fishing villages and the marine fishing community and the plethora of challenges they face. This can only be possible through relevant statistics related to the marine fishing community.

Marine Fisheries Census 2016 is a much awaited exercise carried out by ICAR- CMFRI which is a platform that provides scientific data regarding the social setting of fishermen villages and their community. The responses taken from fishermen at grass root level are going to be a gold mine that will decide the future needs of the sector. This document is going to serve as a bench mark data for policy planners to act upon the real need of coastal dwellers and plan ahead. Further, the inputs required in infrastructure and social needs are also addressed based on this highly relevant data. Budgetary provisions, project formulation, schemes and planning in marine fisheries is going to be largely dependent on this data.

I am aware of the field level complexity and challenges faced by ICAR-CMFRI in dutifully conducting the census, compiling the data and making inferences based on this. The reports in present form is brilliantly laid out and I congratulate Director, ICAR-CMFRI, Dr. A. Gopalakrishnan and the team led by Dr. T. V. Sathianandan and entire staff of ICAR-CMFRI who performed this task with deserving scientific temper.

  
(J.K. Jena)





**डॉ एल रामलिंगम**  
**महानिदेशक (प्रभारी)**  
**Dr. L. RAMALINGAM**  
**Director General (I/C)**



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**GOVERNMENT OF INDIA**

**मत्स्यपालन, पशुपालन और डेयरी मंत्रालय**

**Ministry of Fisheries, Animal Husbandry & Dairying**

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**भारतीय मात्स्यिकी सर्वेक्षण/FISHERY SURVEY OF INDIA**

## Foreword

This is a very pleasant moment for me to put the foreword for this extremely valuable book for the marine management arena.

The marine fisheries census started way back in 2005. As the saying goes, necessity is the mother of inventions, so is the birth of massive work of marine fisheries census across the 8100 km coastline of the country. On 26<sup>th</sup> December 2004, country has witnessed the devastating tsunami. It took out thousands of lives, multi-crore properties and left behind a dark future for the coastal population, mostly the fisher folks. That time, Government of India has no clue about these coastal inhabitants by birth, to initiate the rehabilitation programme to restart life again from scratch. The dire need gave birth to the exercise called Marine Fisheries Census to ascertain much deeper in to the fisher folk population.

First marine census was conducted during 2005, second in 2010 and third during 2015 as Government of India took a policy decision to conduct this exercise with a time scale of five years and result of the census are documented through this manuscript. It depends all about our coastal population such as number of people, male – female, young ones, household, profession, etc. all included.

Even our southernmost island Andaman and Nicobar is also included. I convey my hearty thanks to the entire force of Scientists, Policy makers, Administrators, Enumerators and each and every one who took lots of pain to make this extremely tough exercise successful. Amidst Covid 19 pandemic situation, this book is getting published by virtue of tireless efforts of team CMFRI and FSI. Entire team member's efforts were well appreciated. With my long association with marine fisheries spanning over almost four decades, I found this manuscript is an epitome of attributes of coastal population.

I am sure it will be great ready reckoner for the decision makers, professionals and citizens at large.

Best wishes for successful publication.

**(Dr. L. Ramalingam)**  
**DIRECTOR GENERAL (I/C)**





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Indian Council of Agricultural Research  
केन्द्रीय समुद्री मात्स्यिकी अनुसंधान संस्थान  
Central Marine Fisheries Research Institute



(कृषि अनुसंधान एवं शिक्षा विभाग, केन्द्र कृषि एवं किसान कल्याण मंत्रालय, भारत सरकार)  
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**National Co-ordinator, Marine Fisheries Census, 2016**

## Preamble



Data is the *sine qua non* of good governance and data generation is a formidable task. Though conducting the National Marine Fisheries Census 2016 has been a challenging endeavour, we at ICAR-Central Marine Fisheries Research Institute are bestowed with such rich experience and vast expertise in big data management starting with the first survey of marine fishing villages and marine fish landings centres carried out during 1948-49, that, this mammoth task could be accomplished as a remarkably rewarding as well as enriching achievement. While the huge, but systematic data base generated is of utmost significance for governance-oriented decision making at the central as well as state levels, the process itself has offered us unique opportunities for strengthening our bonds with the stakeholders—the large majority of fishers in remote, mostly under-developed and environmentally challenged coastal villages. Despite the hardships, our

staff members had to endure during the enumeration, the exercise could be taken to its logical end only because of the whole hearted cooperation extended by the fisherfolk and allied stakeholders of the nation.

I am happy to acknowledge the immense support and interest shown by the fisherfolk and allied stakeholders of all the maritime states of the nation who patiently provided all the required information to our staff members on the census job. The interface was well-mediated by the equally helpful assistance from the officials of the respective state departments of fisheries. Having conducted the Marine Fisheries Census in 2005 and 2010 with due funding support from the then Department of Animal Husbandry, Dairying and Fisheries (DADF), Government of India, we were well equipped to address any operational issues that may crop up during enumeration or data tabulation. Nevertheless, our staff members were provided with sufficient skill enhancement trainings, well prior to their systematic deployment in the field. It is pertinent to provide a glimpse into the kind of preparations we have undertaken for this exercise. All across the nine maritime states and two union territories, we developed census data collection forms in different languages, dispatched them to different centers, printed notices in vernacular languages, gave media circulation, coordinated census enumeration at all the locations, made necessary supervisions, collected the forms back and finally brought them to the headquarters at Kochi for data digitization and data processing. The National Marine Fisheries Data Centre of ICAR-CMFRI coordinated the data entry, compilation and analysis. The entire scientific, technical, administrative and supporting staff of the Fishery Resources Assessment Division ably led by the division Head, Dr. T. V. Sathianandan, made remarkable contributions in bringing out the census reports. My sincere thanks to Dr. G. Syda Rao, former Director of ICAR-CMFRI for his encouragement and initiations for taking up this responsibility by the Institute.

The census reports coming as a sequel to that of 2005 and 2010 would act as a definite bench mark reference to anyone keen on understanding the dynamic changes taking place in the human dimension of the marine fisheries sector of India. This is a veritable gold mine of data for researchers, policy planners, and many others. The public can access this report through the digital repository eprints@CMFRI, once it is officially released.

Once again, I am expressing my sincere thanks to the DADF, Govt of India (presently the Department of Fisheries – DoF) who supported by funding the census programme, ICAR officials who encouraged the activities, the entire ICAR-CMFRI fraternity whose enthusiasm made this task a commendably collective feat and the Fishery Survey of India (FSI) for collecting the information from Lakshadweep and Andaman & Nicobar islands.

A. Gopalakrishnan



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# Executive Summary

Marine fisheries is an important sector in India supporting the livelihood of a large population of marine fisherfolks in different ways. It is important to have updated information on various aspects of the marine fisheries sector, including socioeconomic status of marine fisherfolks and infrastructure existing in marine fishing villages. In addition to information on quantity of fish harvested every year the planners and researchers are interested to know details of fishing crafts and fishing gears in the fishery, number of fishing villages and landing centers, fishermen population, their educational and occupational status etc., for policy development and formulation of development plans for the marine fisheries sector. These information are periodically collected through census and will be useful also for examining the impact of already implemented development programmes. For the marine fish landings data collection system of ICAR-Central Marine Fisheries Research Institute (ICAR-CMFRI), the information generated through census forms the basic sampling frame for the sample survey regularly carried out by the Institute.

Historically, ICAR-CMFRI has been periodically conducting frame surveys for generating necessary information about marine fisheries sector. The first planned survey of marine fishing villages and marine fish landings centers was carried out by the Institute during 1948-49 generating information on fishing seasons, village-wise fishermen population, number of active fishermen, fishing units of different categories and varieties of fish harvested. Similar surveys were further conducted by ICAR-CMFRI during 1957-58, 1961-62 and 1973-77. A systematic marine fisheries census was carried out by the institute, first time in 1980 covering all maritime states except Maharastra, within a period less than a month. In this census micro level information from 2,132 marine fishing villages were collected on different aspects of marine fisheries. Details of

fishing crafts from 1,442 landing centres and social, educational and employment details of 3,33,038 households were collected in 1980 census using schedules by employing nearly 1,500 enumerators with the supervision of 165 staff from ICAR-CMFRI. Details of the census data were published in 1981 in the publication, Marine Fisheries Information Service, No. 30. The next marine fisheries census was conducted in 2005 after a gap of 25 years, first time with funding from the then Department of Animal Husbandry Dairying and Fisheries (DADF), Ministry of Agriculture. In this census, 3,202 marine fishing villages were covered employing 1,492 enumerators and 185 staff from ICAR-CMFRI supervised the enumeration. Also, details of different categories of fishing crafts in the fishery were collected from 1,332 marine fish landing centres and population details from 7,56,212 households. Data generated in this census on various aspects of marine fisheries in India were published in reports, for all India in two parts and one each for the maritime states.

The next marine fisheries census was conducted by ICAR-CMFRI in 2010, again with financial support from DADF as the component 'Census on marine fisheries' of the 11th plan central sector scheme of DADF entitled "Strengthening of Database and Geographical Information System for Fisheries Sector". In this census, the data collection was held during 16 April to 15 May 2010. Towards data collection 2,074 enumerators were deployed for collecting information from 8,64,550 households in 3,288 marine fishing villages of 9 maritime states and 2 union territories. Information on fishing crafts existing in the fishery was collected from 1,511 marine fish landing centres. Three major types of schedules were used for census data collection with additional sub categories of schedules.

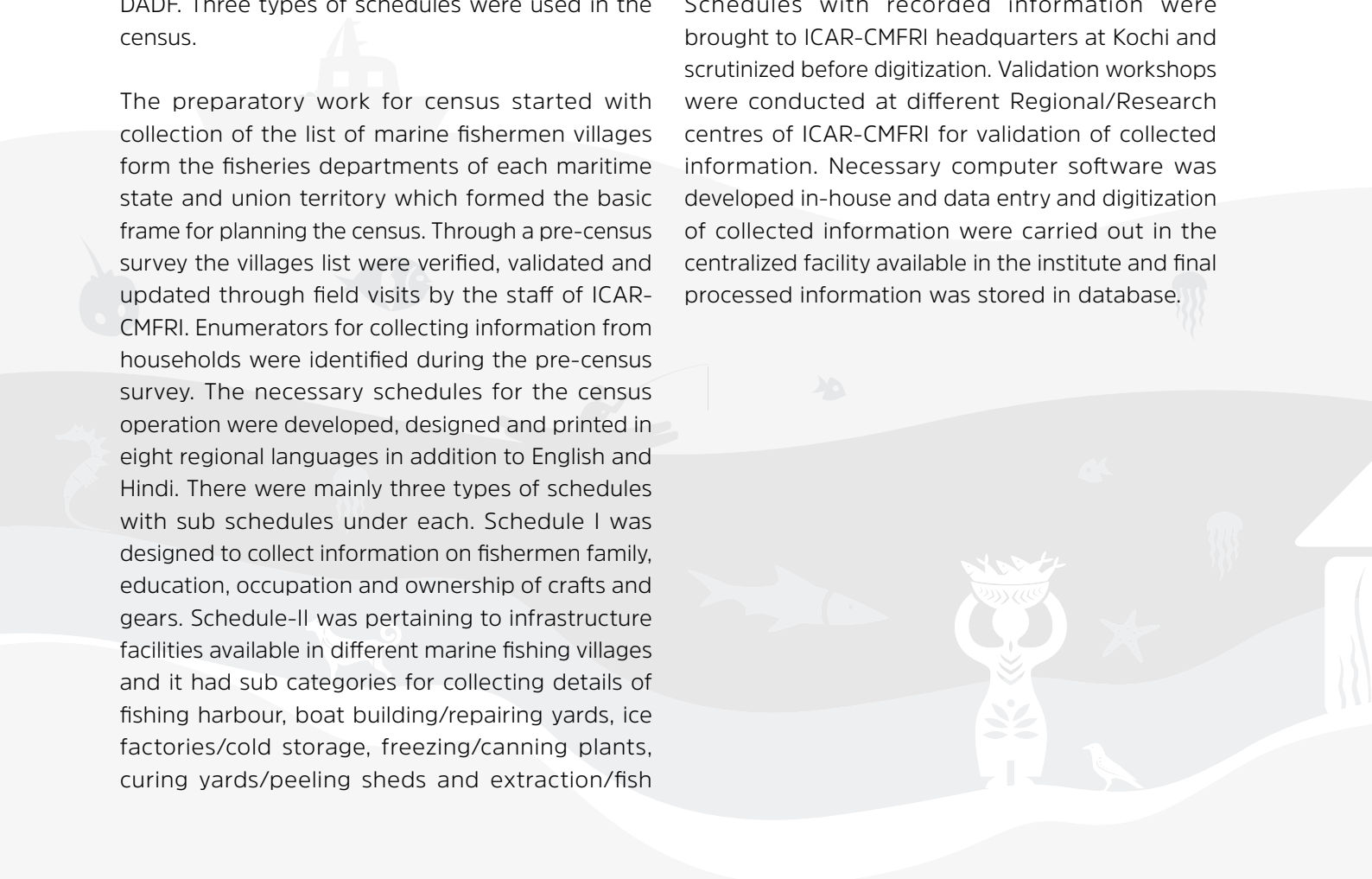
The Marine Fisheries Census 2016 was conducted by ICAR-CMFRI for a duration of 30 days starting

from 1st February to 1st March, 2016. The institute received financial support for census from DADF under their central sector scheme "Strengthening of Database and Geographical Information System for Fisheries Sector" with 'Census on marine fisheries' as a component of the scheme. The census was conducted by ICAR-CMFRI in all the 9 maritime states (West Bengal, Odisha, Andhra Pradesh, Tamil Nadu, Kerala, Karnataka, Goa, Maharashtra, and Gujarat) and 2 Union Territories (Puducherry and Daman & Diu) and Fishery Survey of India (FSI), conducted census in Andaman & Nicobar and Lakshadweep islands. Schedules for the census were developed after a series of workshops and brainstorming sessions and were approved by the Technical Monitoring Committee (TMC) set up by DADF. Three types of schedules were used in the census.

The preparatory work for census started with collection of the list of marine fishermen villages from the fisheries departments of each maritime state and union territory which formed the basic frame for planning the census. Through a pre-census survey the villages list were verified, validated and updated through field visits by the staff of ICAR-CMFRI. Enumerators for collecting information from households were identified during the pre-census survey. The necessary schedules for the census operation were developed, designed and printed in eight regional languages in addition to English and Hindi. There were mainly three types of schedules with sub schedules under each. Schedule I was designed to collect information on fishermen family, education, occupation and ownership of crafts and gears. Schedule-II was pertaining to infrastructure facilities available in different marine fishing villages and it had sub categories for collecting details of fishing harbour, boat building/repairing yards, ice factories/cold storage, freezing/canning plants, curing yards/peeling sheds and extraction/fish

meal plants. Schedule-III was designed to collect landing centre/fishing harbour wise information on fishing crafts and fishing gears existing in the fishery. Before actual census operation technical workshops were conducted in different research/regional centers of ICAR-CMFRI for training the field level supervisors on conduct of the actual census operation. Enumerators were given hands on training few days prior to the census operation. To ensure maximum reliability and validity, supervision of data collection was done at different levels. Scientist-in-charge of Regional/Research/Field centers did the regional level supervision; district level supervision was carried out by scientists and field level supervision by technical officers.

Schedules with recorded information were brought to ICAR-CMFRI headquarters at Kochi and scrutinized before digitization. Validation workshops were conducted at different Regional/Research centres of ICAR-CMFRI for validation of collected information. Necessary computer software was developed in-house and data entry and digitization of collected information were carried out in the centralized facility available in the institute and final processed information was stored in database.



# Marine Fisheries Census 2016 – Main features

## Setting

The Department of Animal Husbandry Dairying and Fisheries (DADF), Ministry of Agriculture in their twelfth five year plan central sector scheme on “Strengthening of Database and Geographical Information System for the Fisheries Sector” included marine fisheries census as one of the components and entrusted the task of conducting marine fisheries census of the main land to ICAR-CMFRI, Kochi realizing the experience and expertise available with ICAR-CMFRI. Census of island territories of Andaman & Nicobar and Lakshadweep was entrusted with the Fishery Survey of India. The information generated through census will go to the national database and will be very much useful to planners, researchers and managers in the marine fisheries sector. The mammoth exercise of marine fisheries census was conducted by ICAR-CMFRI during 1st February to 1st March 2016 covering 3,477 marine fishing villages distributed in 9 maritime states and union territories of Puducherry and Daman & Diu by deploying 2,825 enumerators. The total budget provision was ₹3.80 crores and information on various aspects were collected from 8,93,258 marine fishermen households using three different categories of schedules.

## Scope

Marine capture fisheries sector of India, has often been challenged by the paradox of subsistence and large scale entrepreneurship co-existing,

often vying with each other, in the same geo-social canvas. With the fast outgrowing ownership pattern of holdings in the fisheries sector fast, the traditional confines to the occupation, a comprehensive enumeration of the demarcated fishing villages alongside the infrastructure, human resources and post-harvest facilities as concomitant information is the need of the planners and the state. Hence this census exercise as reported here is all pervasive of the socio-economic, educational, holding pattern of inhabitants of the identified fishing villages, who are involved in core fishing or fishing related vocation and it records the information with the granularity of household (family). By design this exercise is supposed to collate all relevant information pertaining to fisheries with the fishermen families as the pivot. As the entire spectrum of Indian marine fisheries and its inventorization is done from the fishing village point of view, the enumerated parameters may have to be viewed in that backdrop. However for information on crafts in the fishery a separate list originating from each and every landing point is provided. Planning needs a judicious juxtaposition of these two expoundings.

## Objectives

The marine fisheries census 2016 was carried out with the following objectives.

- To determine fishermen population size and structure at micro level

- To assess the educational, socio-religious status of fisherfolk
- To obtain occupational status of fishermen
- To determine active fishermen engaged in fishing
- To determine gender-wise occupation in fishing allied activities
- To determine the number of fishing crafts and fishing gears owned by fisherfolk
- To obtain information on existence of infrastructure facilities
- To obtain information on other utilitarian facilities and social aspects
- To quantify the number of fishing crafts and fishing gears in the fishery

information from each household was collected during the census operation using different data collection schedules. Different levels of supervisors of census data collection received training well in advance through the training workshops organised at different research/regional centres of ICAR-CMFRI and also at its headquarters. The enumerators were trained prior to the census data collection and were under strict supervision of field and district level supervisors during data collection. Only those households that fell under the definition of marine fishermen household were covered in the census. Information on fishing crafts in the fishery and infrastructure facilities existing in marine fishing villages were collected directly by the field level supervisors. As the enumerators were from the same village and better acquainted with the local situation non-sampling errors due to non-response could be reduced to the minimum. Supervision of data collection at different levels also resulted in reducing the non-sampling errors to minimum.

## Reference Period

The reference period for the marine fisheries census 2016 is 1st February to 1st March 2016.

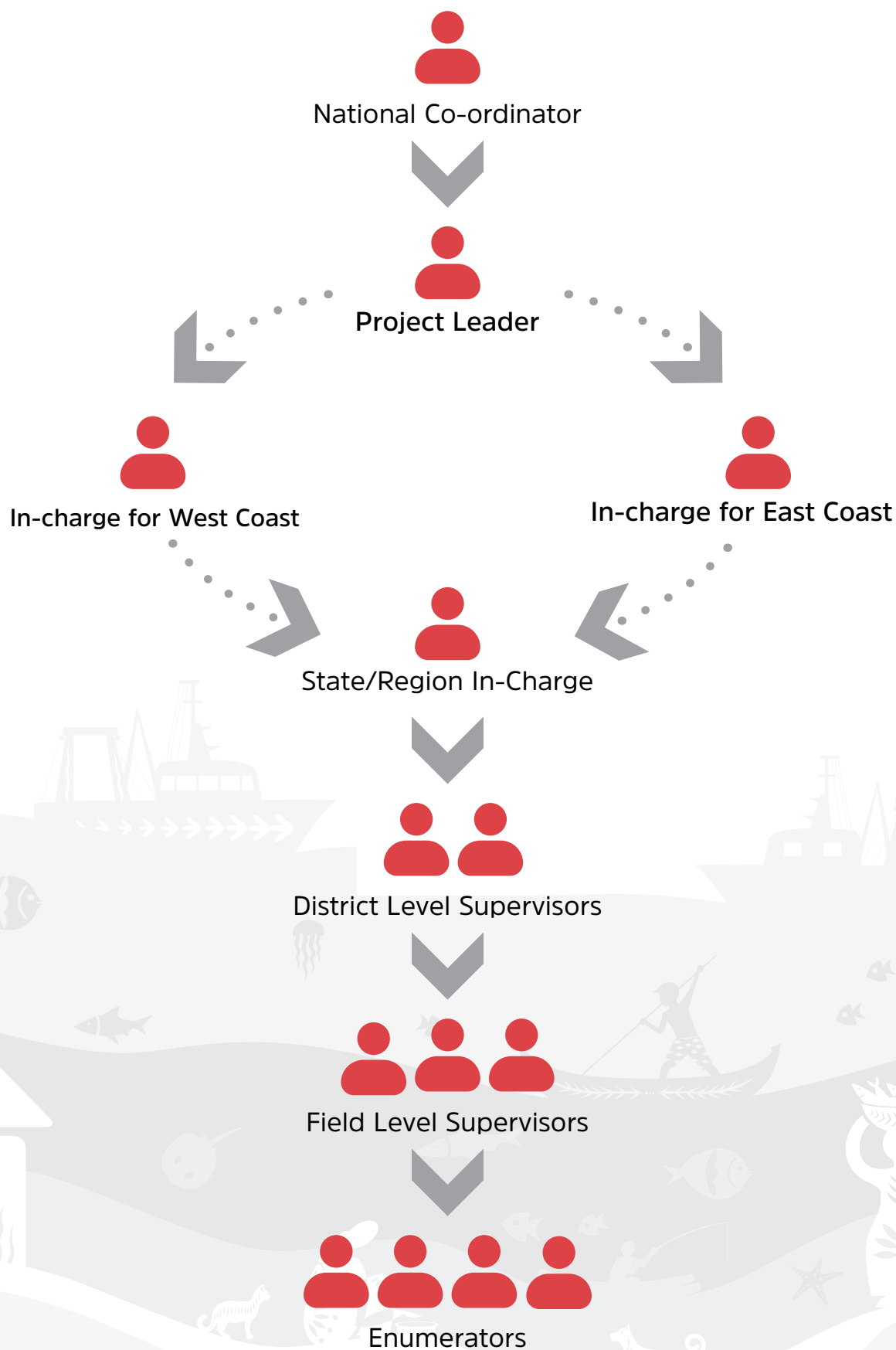
## Methodology

The basic frame for the conduct of census is the list of marine fishing villages in different maritime states and union territories in the country. The list of marine fishing villages available with ICAR-CMFRI was updated with the latest information collected from the respective state fisheries departments. Further, this was validated in the pre-census field survey conducted during October 2015 and information on number of households in each village was also collected. Enumerators were identified and selected locally and micro level

## Organization

The organization structure for Marine Fisheries Census 2016 is given below.

Supervision of census data collection was carried out at different levels. The overall co-ordination was vested with the national co-ordinator with assistance from the project leader. The in-charges for east and west coasts helped the project leader for overall supervision of census. The regional in-charges were responsible for co-ordinating the census operation in the maritime states belonging to their region. Scientists-in-charge of different regional and research centres of ICAR-CMFRI were designated as the state-in-charge for conduct of census in different maritime states and they supervised the census operation with the assistance



of district level supervisors. Immediate supervision of data collection by the enumerators was done by the field level supervisors who had expertise in data collection from the field.

## Designing of schedules

Fishery Resources Assessment Division (FRAD) of ICAR-CMFRI was primarily responsible for designing the schedules for data collection. The schedules were prepared after brain storming sessions in the Institute in which Heads of different divisions, Scientist-in-charges of regional/research centres and other scientists made their contribution. The draft schedules were presented before the Joint Secretary, DADF and also in the Technical Monitoring Committee meeting organized by DADF and the suggestions were incorporated to arrive at the final schedules for census data collection. Following are the descriptions of three categories of schedules used in the census.

## Categories of schedules

- Schedule-I (Household details)
- Schedule-II (Infrastructure facilities in fishing villages)
  - Schedule-II, Form-II(a) (Details of Boat building/Repairing yards)
  - Schedule-II, Form-II(b) (Details of Ice Factories/Cold Storages)
  - Schedule-II, Form-II(c) (Details of Freezing/Processing Plants)
  - Schedule-II, Form-II(d) (Details of Curing Yards & Peeling sheds)

- Schedule-II, Form-II(e) (Details of Extraction Plants/Fish Meal Plants)
- Schedule – III (Summary of Fishing Crafts in Fishery)
  - Schedule – III (a) (Details of Fishing Harbours)
  - Schedule – III (b) (Details of Mechanized Fishing Vessels in Fishing Harbours/Landing Centre)
  - Schedule – III (c) (Details of Motorized (Inboard/Outboard) Fishing Vessels in Fishing Harbours/Landing Centre)

The census covers the fishing villages and landing centres by strictly following their civic limits. Hence the reported infrastructure facilities are those which lie within the boundaries of the villages rather than the exhaustive list of all functional processing and other post-harvest facilities.

## Workshops and training of supervisors

Pre-census workshop for Marine Fisheries Census 2016 was organized at ICAR-CMFRI, Kochi in collaboration with DADF, Ministry of Agriculture, New Delhi on 28th May 2013. Workshops and brain-storming sessions were organized at regional and research centres of ICAR-CMFRI and at headquarters Kochi during December 2014 to January, 2015 to finalise the schedules for Marine Fisheries Census 2016. During November-December, 2015, training for different levels of supervisors of Marine Fisheries Census 2016, was given at regional and research centers and field centers of ICAR-CMFRI.

Training programmes in connection with Marine Fisheries Census 2016 for Field/ District/ State level supervisors were conducted at six locations prior to census. The first training programme



was conducted during 12-13, November, 2015 at CMFRI headquarters, Kochi for the supervisors of Kerala. The second and third training programmes were held during 18-19, November, 2015 at Veraval regional centre and Madras research centre of ICAR-CMFRI, for supervisors of Gujarat, Tamil Nadu and Puducherry. The fourth training was conducted during 19-20, November, 2015 at Visakhapatnam regional centre of CMFRI for supervisors of West Bengal, Odisha and Andhra Pradesh. The fifth training was organized during 20-21 November, 2015 at Mumbai research centre of CMFRI for supervisors of Maharashtra and Daman & Diu. The last training was conducted during 1-2 December, 2015 at Mangalore research centre of CMFRI for supervisors of Karnataka and Goa.

## Engagement of enumerators and their training

For the conduct of marine fisheries census, 2,825 enumerators were engaged for a period of one month. They were with minimum secondary level of education and were mostly selected from the respective fishing villages. The enumerators were trained by the field level supervisors few days prior to the actual census operation. Printed instruction manuals in vernacular languages describing different items covered in the schedules were also provided to them for reference during data collection.

## Publicity and media coverage

Sufficient coverage in print and visual media was given about the marine fisheries census programme. Publicity materials in local languages were also distributed in the marine fishing villages for awareness among fisherfolk.

## Data digitization, processing and report preparation

On completion of the census operation, all the schedules with collected information were brought to ICAR-CMFRI headquarters at Kochi and scrutinized for consistency and completeness before digitization. Computer software was developed in-house for data entry, storage and retrieval. Data entry and digitization of information in schedules were carried out using the developed software. All the information were stored in MS Access database and also stored in an IBM server and magnetic tapes. Preliminary analysis and tabulation was done by developing database queries in MS Access. Different tables were generated and validated as necessary. Village-wise, taluk wise, district-wise and state wise tables were prepared on each items for creation of final reports.

## Census items and definitions

### Schedule I

- Head of fishermen family
  - Identity
  - Poverty line
  - Type of house
  - Religion
  - Caste
  - SC/ST/OBC/Others
  - Traditional fishermen
  - Family size (Gender-wise adults and children)
  - Educational status
  - Occupation
- 
- Actual fishing (Full time/part time)
  - Fish seed collection (Full time/part time)
  - Fishing associated activities (Gender wise) marketing, net making/ repairing, curing/ processing, peeling/cutting, labours etc.)
  - Activities other than fishing

- Migration to other states for fishing/ associated activities
  - No. of Members
  - To which State
  - Period of migration
- Life saving equipments
- Communication/electronic gadgets
- Membership in co-operatives
  - Fisheries co-operatives
  - Others
- Aquaculture practices (Type of culture, area, members involved, leased/owned, trainings undergone etc.)
- Fishing craft ownership
- Mechanized (Type & length of craft, Engine Horse Power and sharing percentage)
  - Trawler
  - Gillnetter
  - Purseseiner
  - Dolnetter
  - Ringseiner
  - Liner
  - Others
- Inboard (Type & length of craft, Engine Horse Power and sharing percentage)
  - Wooden Built
  - Iron Built
  - Wood Fibre
  - Others
- Motorized (Outboard) [Type & length of craft, Engine Horse Power and sharing percentage]
  - Catamaran
  - Dugout canoe
  - Plank built boat
  - Plywood boat
  - Fibre glass boat
  - Ferro cement boat
  - Teppa
  - Others
- Non-Motorized (Type & No. of crafts)
  - Dugout canoe
  - Catamaran
  - Plank built
  - Ferro cement
  - Thermocol
  - Outrigger canoe
  - Masula boat
  - Others
- Fishing Gear Ownership (Type, No. & Share)
  - Trawlnet
  - Gillnet
  - Driftnet
  - Ringseine
  - Purseseine
  - Boatseine
  - Bagnet
  - Shoreseine
  - Castnet
  - Hooks & lines
  - Fixed nets/dipnets/stakenets
  - Traps
  - Scoopnet
  - Dolnet
  - Others
- Drinking water facility
  - Tap water
  - Well



- Hand Pump
- Tubewell/Borehole
- Spring/River
- Canal
- Pond/Lake
- Others
- Availability of Electricity
- Fish marketing facility
- Auction shed
- Shortest distance from the high tide line
- Boat building/repairing yards
- Ice factories/cold storages,
- Freezing/processing plants
- Curing yards/peeling sheds,
- Extraction plants/fish meal plants

## Schedule II

- Fishing villages & infrastructure
  - Name of fishing village
  - Area of fishing village
  - No. of *pucca* & *kutchha* houses
  - Total population
  - Fishermen population
  - Infrastructure facilities
  - Electrification
  - Road connectivity, bus stand/bus stop
  - Availability of drinking water,
  - Rail connectivity
  - Educational institutions
  - Hospitals
  - Banks
  - Fisheries & other co-operatives societies
  - Post office
  - Police station/Aid post
  - Mobile phone coverage
  - Internet facility
  - No. of community centres
  - No. of local festivals
  - No. of cinema theatres
  - No. of liquor shops
  - Jetty facility
  - Fishing harbours under constructions
  - Petrol/Diesel bunks
  - Quantity of oil supplied to fishing boats/day,
  - Cyclone shelter

## Schedule III

- Landing centre details
  - name of the centre
  - number of boats employed in fishing with type of boat
  - fishing villages which use this landing centre
- Details of fishing harbours
  - berthing capacity
  - fuel availability
  - fresh water availability, etc.
- Details of mechanized craft
  - registration details
  - type of craft
  - engine specifications
  - storage facility
  - equipment used
  - type of gears used, etc.
- Details of motorized craft
  - registration details
  - engine power
  - material used
  - gears employed
  - fuel consumption
  - equipment installed
  - cost, etc

## Definitions

**Fishing Village:** An assemblage of houses/ dwelling place where marine fishermen live, which is recognized by state fisheries department. A settlement of households which comes under a separate village-panchayat is a Hamlet.

**Fish landing centre:** The place or harbour where fishermen land their fishing craft with catch.

**Household:** A household consists of a person or a group of persons, who live together in the same house (*pucca/kutchha*), share the same house-keeping arrangements and are catered as one. It is important to remember that members of a household are not necessarily related (by blood or marriage) as, for instance, maidservants may form part of household. On the other hand, not all those related in the same house are necessarily members of the same household, two brothers while living in the same house with their wives and children may or may not form separate households depending on their catering arrangements. Thus, in many cases, a house may be broken into separate households (families).

**Marine fisherman:** A person (male/ female/LGBTQ) who is engaged in marine fishing or any other activity associated with marine fishery or both.

**Traditional fishermen:** Those who are fishermen by birth and fishing is their ancestral occupation.

**Fishermen family:** A family in which at least one member is engaged in marine fishing or associated activities or both.

**Pucca/Kutchha house:** A *pucca* house is one, which

has walls made of burnt bricks, stones (packed with lime or cement), cement concrete, timber etc. and roof made of tiles, galvanised corrugated iron sheets, asbestos cement sheet, reinforced brick concrete, reinforced cement concrete and timber etc. Any structure other than *Pucca* house is termed as *Kutchha* house.

## Family size

- Adult refers to a person who has attained the age of 18 or more.
- Children up to 5 years refer to those who has attained the age up to 5 years, inclusive.
- Children above 5 years refer to those who has attained more than 5 years of age and are below 18 years.

## Occupation

- Full time refers to involvement of at least 90% of the fishable duration in a calendar year.
- Part time includes those fishermen who spend less than 90% of the fishable duration in a calendar year.
- **Actual Fishing:** Adult members in the family engaged in fishing activities in full time or part time.
- **Fish seed collection:** Adult members in the family involved in full time/part time fish seed collection.
- **Fishing Associated Activities:** Adult members in the family engaged in marketing of fish, making/repairing net, labourer, etc.

(labourer includes head load workers, helpers, etc. at the landing centres) and other fishing associated activities such as auctioneers, ice breakers, members involved in collection of bivalves, other shells, seaweed, ornamental fish, etc.

## Education

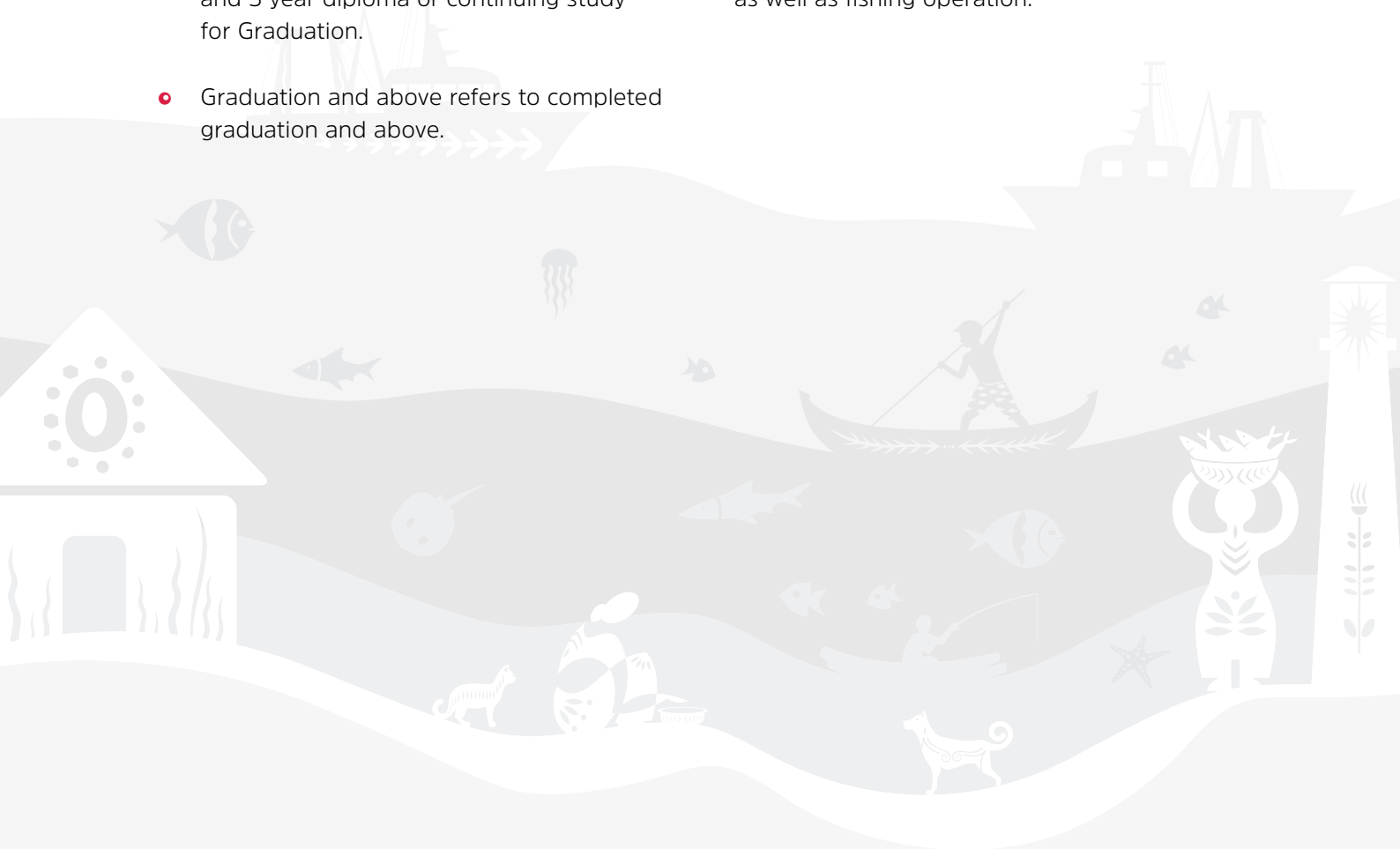
- Primary refers to schooling (completed/continuing) up to standard V or below.
- Higher secondary refers to schooling (completed/continuing) between standard VI and XII.
- Above higher secondary refers to schooling completed higher secondary (XII examination) and 3 year diploma or continuing study for Graduation.
- Graduation and above refers to completed graduation and above.

**Mechanized craft:** Any fishing craft with engine permanently fitted to the hull, which uses machine power for both propulsion as well as fishing operation like casting and pulling the net, operating lines, etc., is identified as mechanized craft.

**Inboard craft:** Any fishing craft that has an engine permanently fitted to the hull or central portion of the craft, which is used only for propulsion and not for fishing operation, is identified as Inboard craft.

**Motorized (Outboard) craft:** Any fishing craft that has an engine fitted temporarily outside the craft, which is used only for propulsion and not for fishing operation, is identified as motorized craft.

**Non-motorized craft:** Any fishing craft that does not use any kind of machine power for propulsion as well as fishing operation.





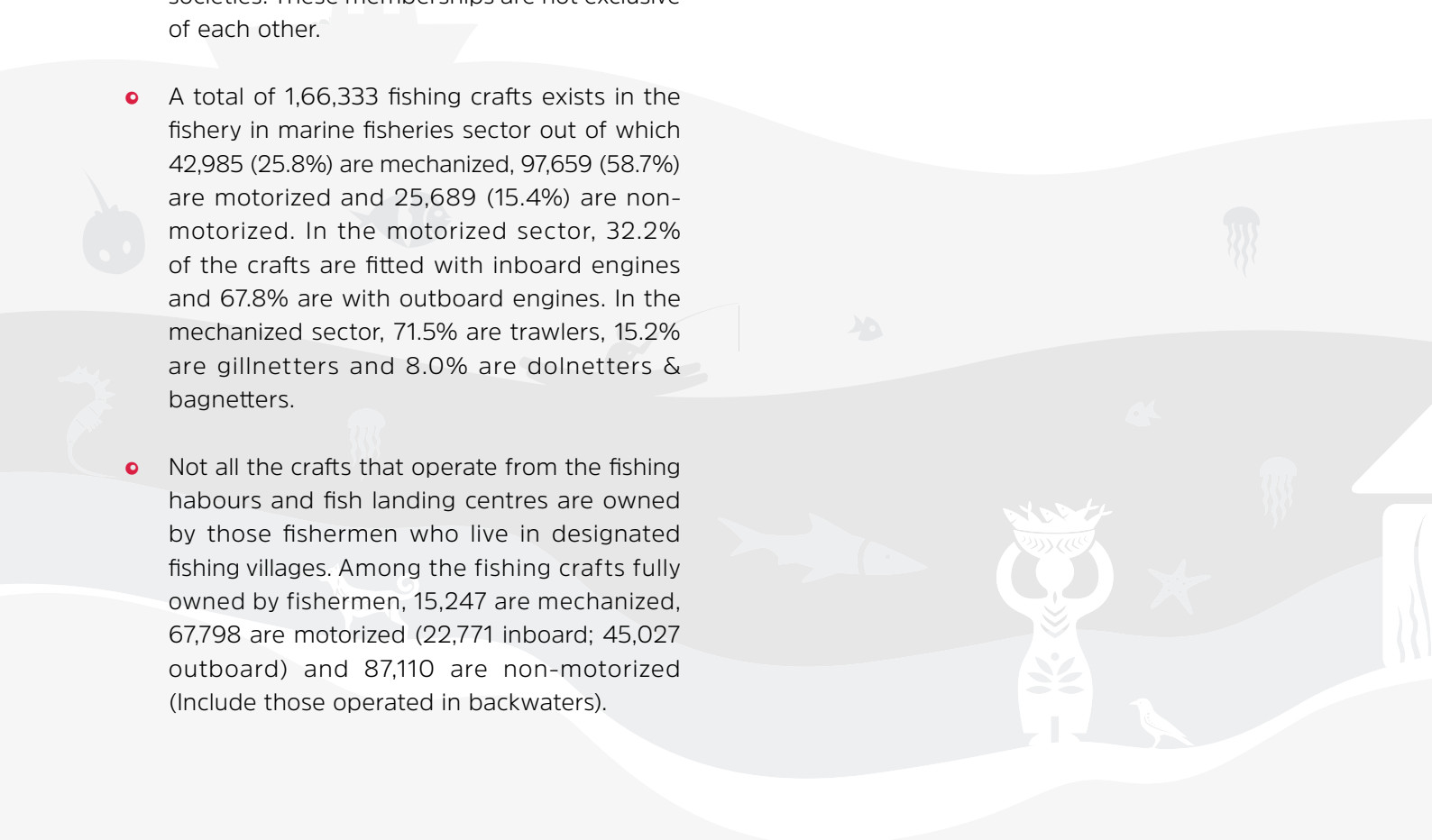
# Summary

- Along the Indian coast there are 3,477 marine fishing villages distributed in 9 coastal states, union territories of Puducherry, Daman & Diu, Lakshadweep and Andaman & Nicobar, the last two being island territories. Highest number of marine fishing villages are in Odisha, Tamil Nadu and Andhra Pradesh with 739 (21.3%), 575 (16.5%) and 533 (15.3%) villages respectively.
- The total number of marine fish landing centres in the country is 1,363 with maximum number of 349 (25.6%) in Tamil Nadu followed by 234 (17.2%) in Andhra Pradesh and 174 (12.8%) in Kerala.
- There are 8,93,258 marine fishermen families residing in the maritime states and Union Territories, with 2,01,855 (22.6%) in Tamil Nadu, 1,55,062 (17.4%) in Andhra Pradesh and 1,21,637 (13.6%) in Kerala, topping the list. Nearly 91.6% of the families are traditional fishermen families.
- In the country 6,00,890 marine fishermen families are below poverty line (BPL) which is 67.3% of the total number of families. Nearly 30.6% of the BPL families are in Tamil Nadu and 25.1% are in Andhra Pradesh.
- The total population of marine fishermen in India is 37,74,577 out of which 21.1% are in Tamil Nadu, 14.9% are in Kerala and 13.7% each are in Odisha and Andhra Pradesh. Among them 19,52,068 (51.7%) are males and 18,22,509 (48.3%) are females. The overall sex ratio is 934 females per 1,000 males. Among the states/U.T.'s, the maximum sex ratio is 998 which is in Puducherry and the minimum is 884 in West Bengal. About 33.2% of the total marine fishermen population is children and the percentage of children in the population is maximum in Gujarat (41.0%) and is minimum in Goa (24.2%).
- While 69.7% of the marine fishermen households are accommodated in pucca houses, 30.3% reside in *kutcha* houses. Analysing the ratios state-wise, it is arrived that the percentage of *kutcha* houses is maximum in West Bengal (81.0%) and minimum in Goa (3.8%).
- Nearly 59.3% of the marine fishermen houses have built-in toilet facility and 51.6% households have tap water supply. About 93.8% of the houses are electrified.
- At national level, 66% of the eligible marine fishermen population have primary or higher level education while 34% of them are unschooled. Among the states/U.T.'s Andhra Pradesh (60.1%) has the maximum proportion of unschooled among eligible population and it is minimum in Kerala (15.3%). Gender wise profile puts proportion of eligible uneducated amongst males at 31.9%, while the same is 36.2% for females.
- The total number of active fishermen in marine fisheries sector is 9,27,081. The number of fishermen engaged in actual full time fishing is 7,48,479 and part time is 1,53,968. The number of people

engaged in fish seed collection is 24,634. There are 9,632 fishermen families engaged in aquaculture activities, out of which, 4,428 received training. The census revealed that 1,70,154 fishermen households are in possession of lifesaving equipment of various kinds.

- The religion based profiling of the fishermen households reveals that 74.3% of them are Hindus, 15.7% Christians and 10.0% Islam. A meagre number of families (155) follow other faiths. There are 15.8% marine fishermen families belonging to Scheduled Cast and Scheduled Tribe category.
- Among the marine fishermen 7,07,833 are members in fisheries co-operative societies and 2,56,705 are members in other co-operative societies. These memberships are not exclusive of each other.
- A total of 1,66,333 fishing crafts exists in the fishery in marine fisheries sector out of which 42,985 (25.8%) are mechanized, 97,659 (58.7%) are motorized and 25,689 (15.4%) are non-motorized. In the motorized sector, 32.2% of the crafts are fitted with inboard engines and 67.8% are with outboard engines. In the mechanized sector, 71.5% are trawlers, 15.2% are gillnetters and 8.0% are dolnetters & bagnetters.
- Not all the crafts that operate from the fishing harbours and fish landing centres are owned by those fishermen who live in designated fishing villages. Among the fishing crafts fully owned by fishermen, 15,247 are mechanized, 67,798 are motorized (22,771 inboard; 45,027 outboard) and 87,110 are non-motorized (Include those operated in backwaters).

- Out of 3,477 marine fishing villages in the country 740 (21.3%) have market facility, 323 (9.3%) have auction sheds, 319 (9.2%) have jetty facility and 842 (24.2%) have cyclone shelters.
- The census shows that there are 402 boat building yards, 1,210 ice factories, 175 freezing plants, 160 fish processing plants, 330 curing yards, 352 peeling sheds, 44 fish oil extraction plants and 44 fish meal plants which are located in the precincts of the fishing villages.



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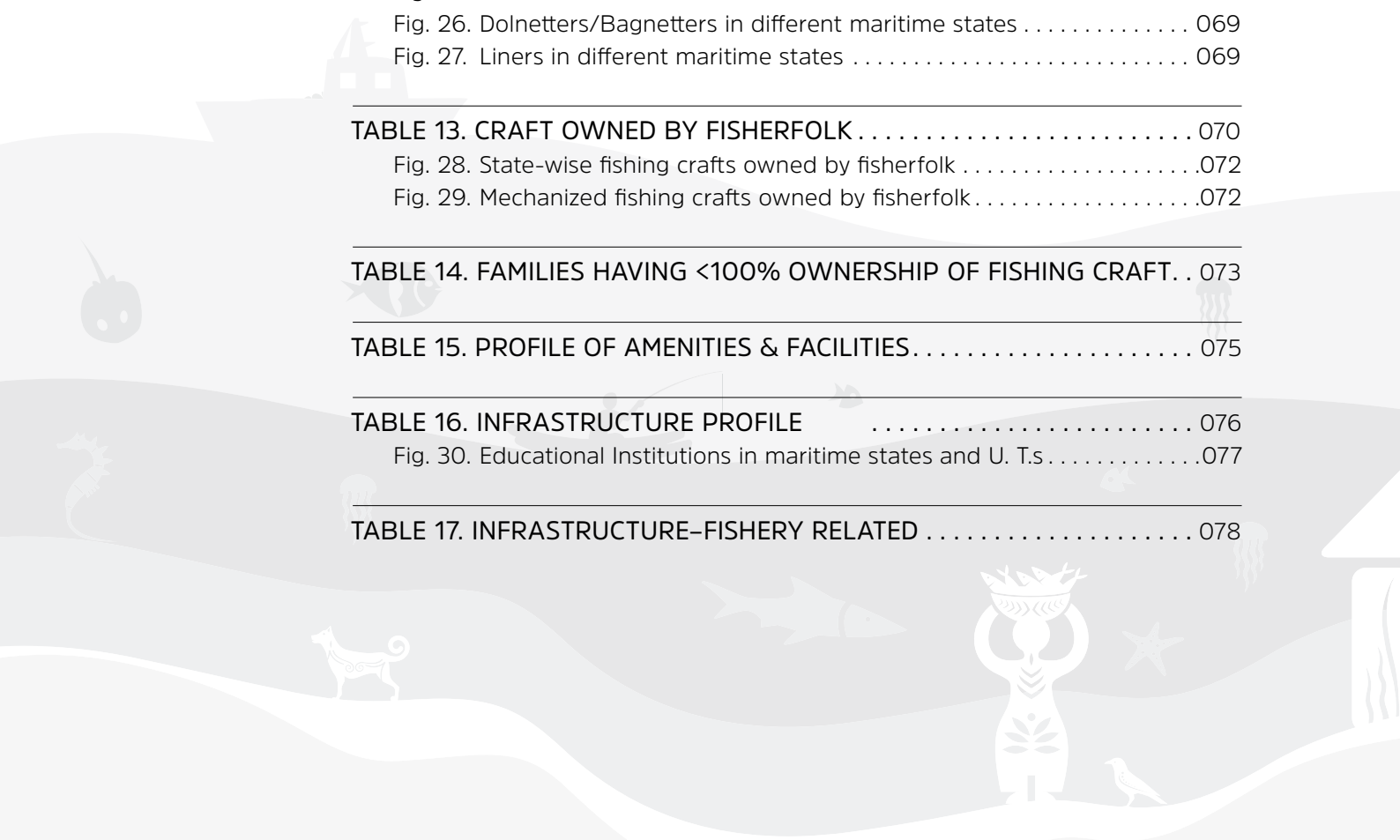
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TABLE 1. STATE PROFILE

State	Coastal length (km)	Landing centres	Fishing villages	Fishermen families	Traditional fishermen families	BPL families	Fisherfolk population
West Bengal*	158	49	171*	81,067	56,447	55,301	3,68,816
Odisha	480	55	739	1,15,228	92,569	48,601	5,17,623
Andhra Pradesh	974	234	533	1,55,062	1,52,062	1,50,669	5,17,435
Tamil Nadu	1,076	349	575	2,01,855	1,96,784	1,83,683	7,95,708
Puducherry	45	22	39	14,347	14,328	12,968	50,270
Kerala	590	174	220	1,21,637	1,16,598	72,507	5,63,903
Karnataka	300	84	162	32,479	30,897	27,312	1,57,989
Goa	104	32	41	2,986	2,922	650	12,651
Maharashtra	720	155	526	87,717	80,906	27,400	3,64,899
Gujarat	1,600	107	280	67,610	64,395	19,123	3,54,992
Daman & Diu	21	8	12	3,163	3,094	20	15,836
Lakshadweep**	132	37	10	4,163	3,003	1,170	27,934
Andaman & Nicobar***	1,962	57	169	5,944	4,486	1,486	26,521
<b>Total</b>	<b>8,162</b>	<b>1,363</b>	<b>3,477</b>	<b>8,93,258</b>	<b>8,18,491</b>	<b>6,00,890</b>	<b>37,74,577</b>

\* Subsequent reference to villages actually mean Gram Panchayat in West Bengal. \*\* Fishing islands. \*\*\* Landing centres/Landing points

Fig. 1. Demographic outline of marine fisherfolk

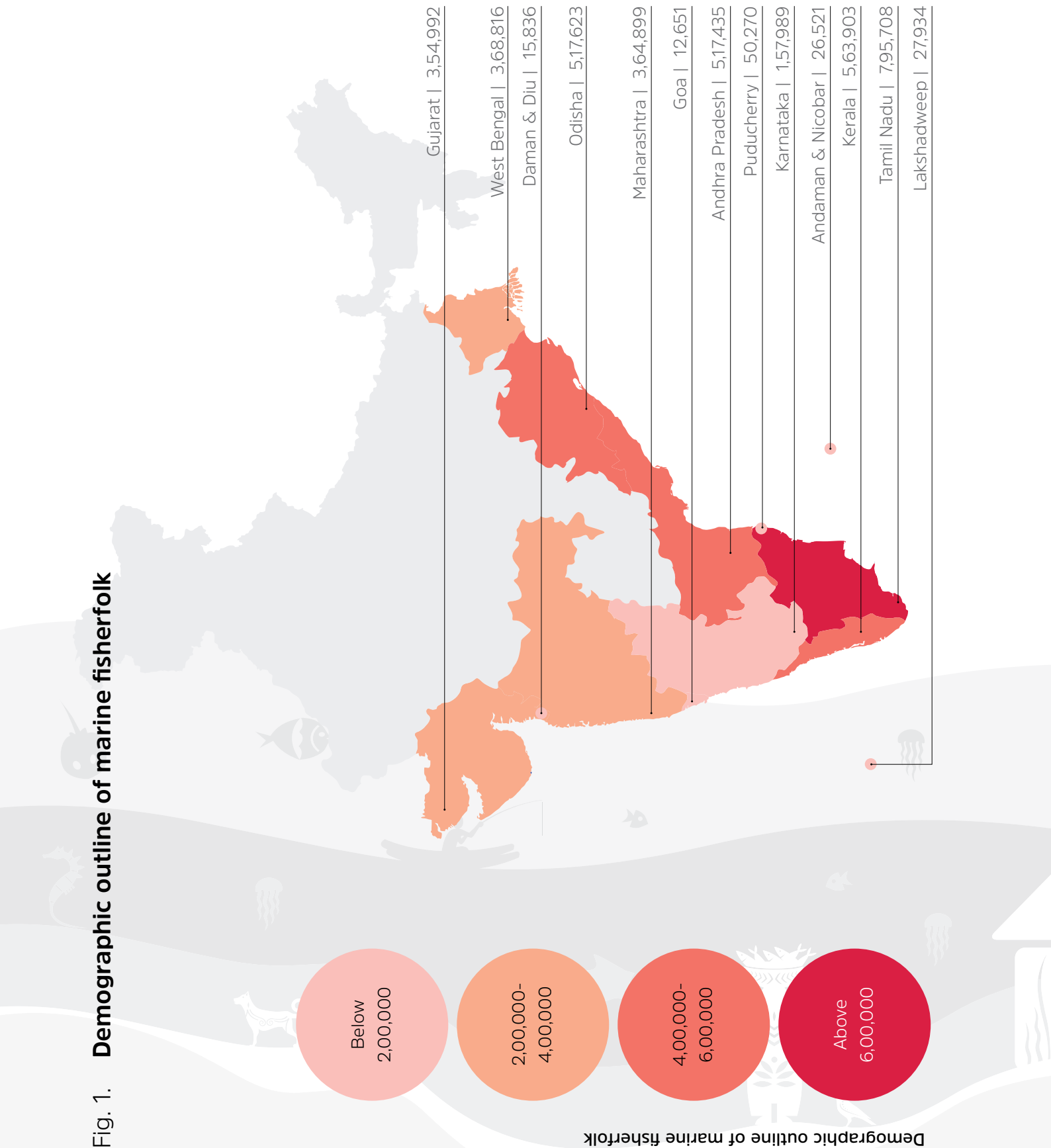


Fig. 2. Marine fishing villages in different states & U. T.s

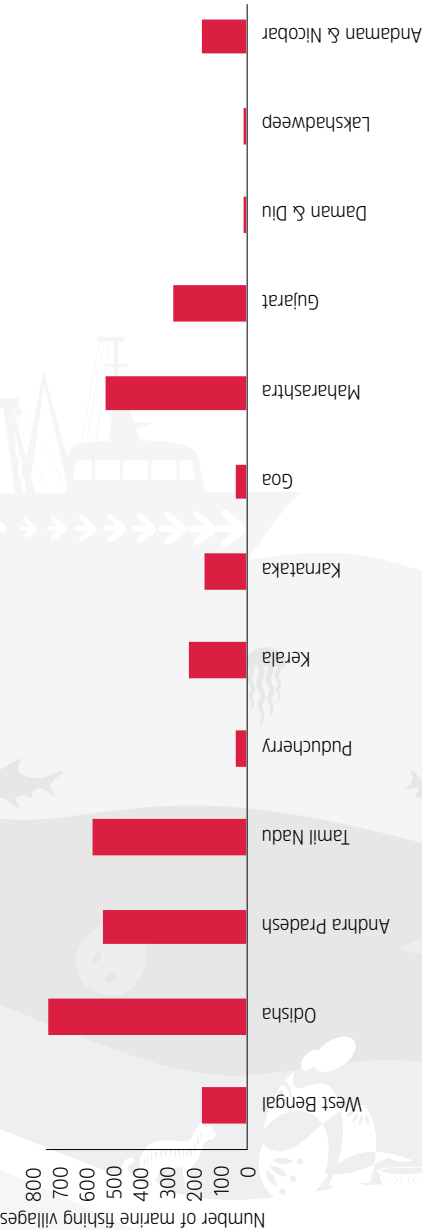


Fig. 3. Landing centres in different states & U. T.s

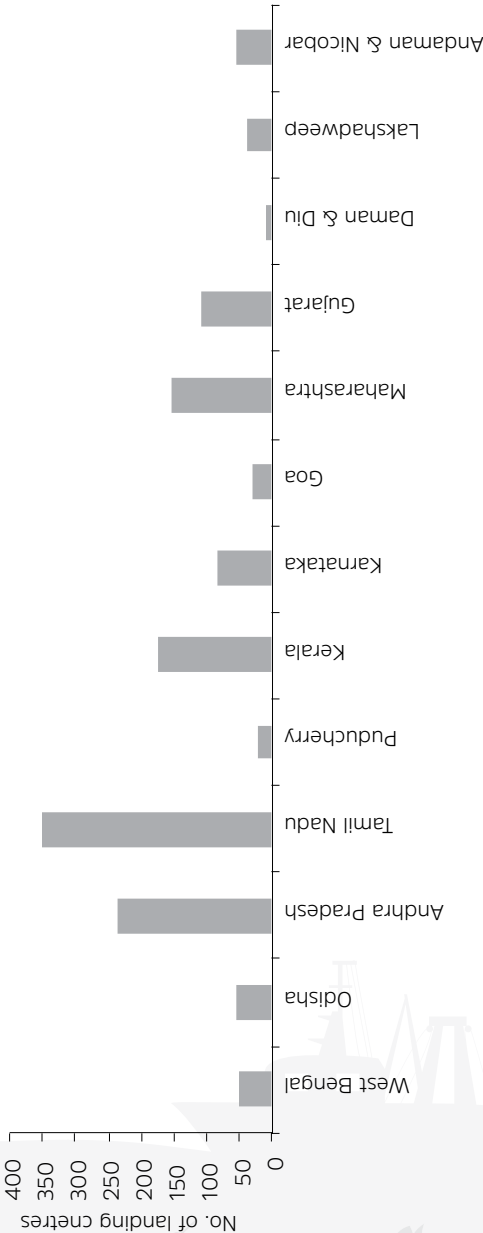


Fig. 4. Marine fishermen families

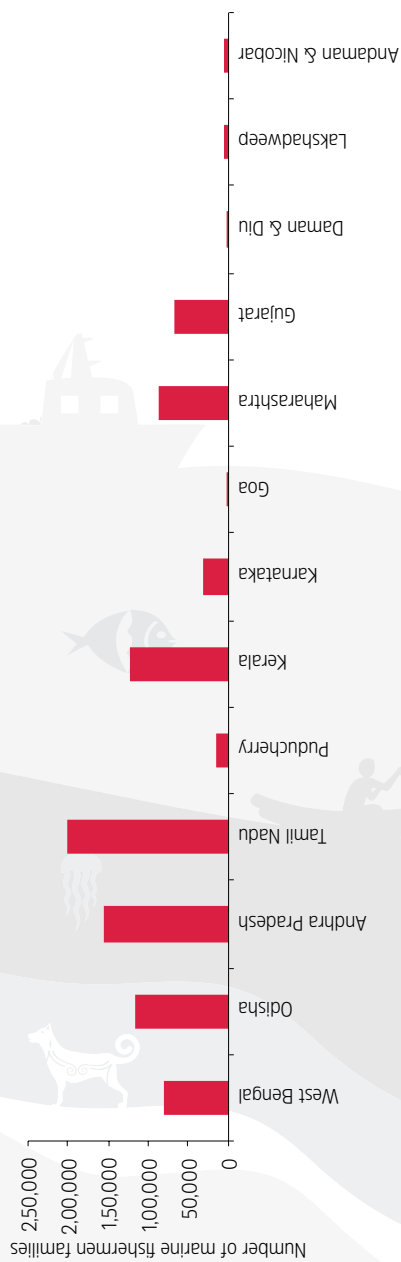


Fig. 5. BPL fishermen families

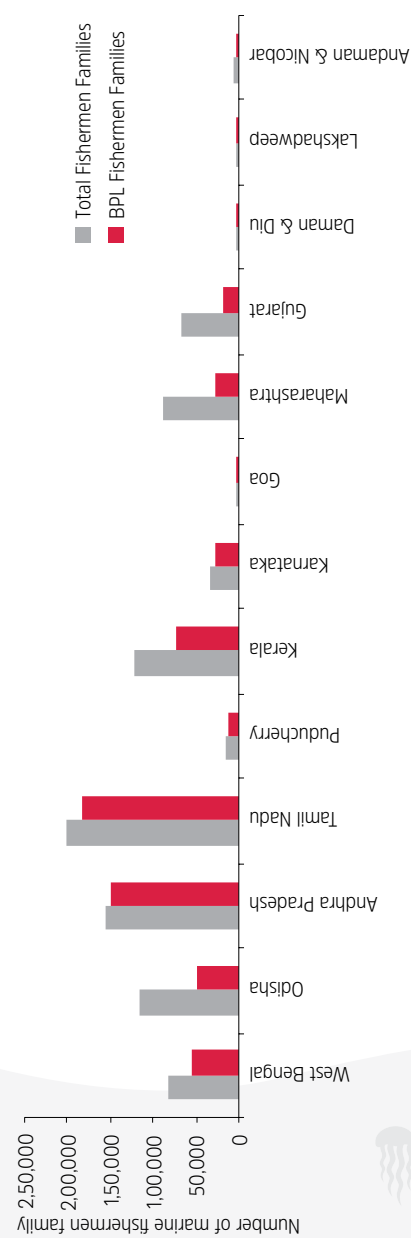


TABLE 2. HOUSING-SCALE &amp; AMENITIES (No. of houses)

State	Total households	Pucca	Kutcha	Rooms less than 3	Without toilet	Electrified	Potable water source access			
							Tap water	Well	Hand pump	Borewell Others
West Bengal	81,067	15,375	65,692	68,637	39,483	61,618	4,474	201	10,552	65,106 734
Odisha	1,15,228	41,234	73,994	99,566	88,806	91,805	11,677	6,185	31,245	62,761 3,360
Andhra Pradesh	1,55,062	1,14,272	40,790	1,28,431	95,381	1,51,624	1,00,874	9,755	16,814	6,939 20,680
Tamil Nadu	2,01,855	1,57,590	44,265	1,14,536	47,569	1,98,793	1,24,716	15,497	22,044	15,151 24,447
Puducherry	14,347	12,336	2,011	5,405	3,295	14,286	11,082	31	296	969 1,969
Kerala	1,21,637	1,08,030	13,607	21,844	9,953	1,19,859	72,260	19,797	2,228	19,027 8,325
Karnataka	32,479	30,129	2,350	9,924	7,970	31,990	9,878	14,519	2,106	4,156 1,820
Goa	2,986	2,874	112	668	279	2,955	2,748	177	0	33 28
Maharashtra	87,717	79,880	7,837	56,090	34,607	86,518	68,099	11,369	1,574	2,498 4,177
Gujarat	67,610	50,923	16,687	51,930	31,952	65,754	46,619	4,271	3,999	1,144 11,577
Daman & Diu	3,163	3,010	153	1,662	1,275	3,161	2,557	7	0	2 597
Lakshadweep	4,163	3,974	189	806	15	4,139	912	2,723	41	11 476
Andaman & Nicobar	5,944	2,555	3,389	2,929	2,794	5,494	4,682	616	19	62 565
<b>Total</b>	<b>8,93,258</b>	<b>6,22,182</b>	<b>2,71,076</b>	<b>5,62,428</b>	<b>3,63,379</b>	<b>8,37,996</b>	<b>4,60,578</b>	<b>85,148</b>	<b>90,918</b>	<b>1,77,859 78,755</b>

Fig. 6. State-wise housing profile

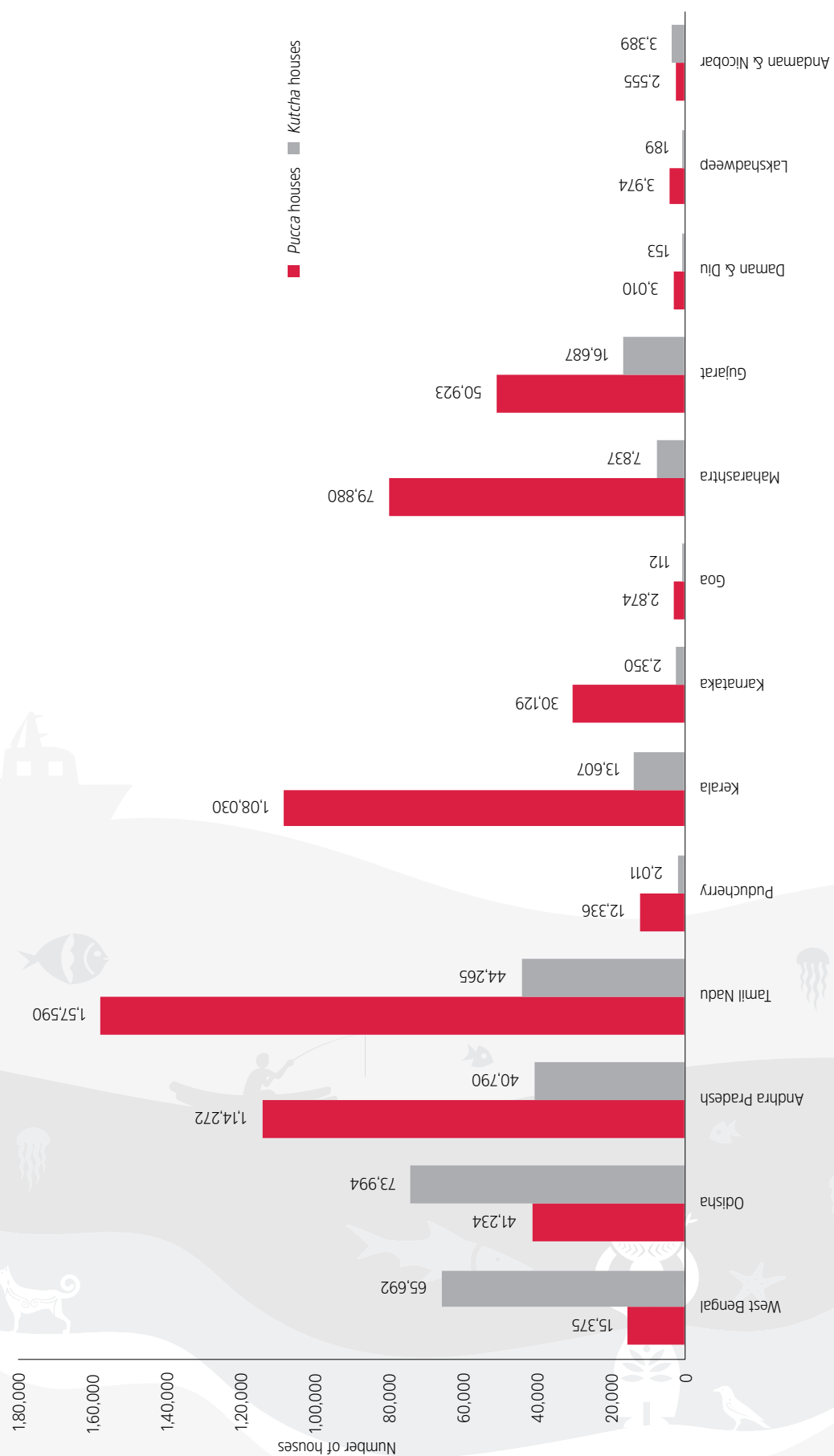




TABLE 3. POPULATION DISTRIBUTION STRUCTURE

State	Male				Female		Total	Average family size	Sex ratio (females per 1,000 males)
	Adult	Children		Adult	Children				
		Upto 5 yrs	Above 5 yrs		Upto 5 yrs	Above 5 yrs			
West Bengal	1,27,101	21,142	47,476	1,12,661	19,359	41,077	3,68,816	5	884
Odisha	1,72,082	31,951	68,107	1,54,086	29,716	61,681	5,17,623	5	902
Andhra Pradesh	1,66,642	21,828	77,596	1,67,887	21,214	62,268	5,17,435	3	945
Tamil Nadu	2,74,417	34,261	1,01,592	2,62,434	33,212	89,792	7,95,708	4	939
Puducherry	15,818	2,027	7,319	16,949	1,981	6,176	50,270	4	998
Kerala	2,05,954	23,294	59,448	1,97,936	22,346	54,925	5,63,903	5	953
Karnataka	60,761	5,912	13,948	58,503	5,795	13,070	1,57,989	5	960
Goa	4,976	378	1,267	4,610	352	1,068	12,651	4	911
Maharashtra	1,30,830	13,746	41,046	1,30,547	13,182	35,548	3,64,899	4	966
Gujarat	1,07,683	28,245	48,425	1,01,768	27,016	41,855	3,54,992	5	926
Daman & Diu	5,470	581	2,120	5,111	608	1,946	15,836	5	938
Lakshadweep	10,697	1,200	2,705	9,733	1,027	2,572	27,934	7	913
Andaman & Nicobar	9,209	1,189	3,625	8,052	1,186	3,260	26,521	5	891
Total	12,91,640	1,85,754	4,74,674	12,30,277	1,76,994	4,15,238	37,74,577	4	934

Fig. 7. Population structure

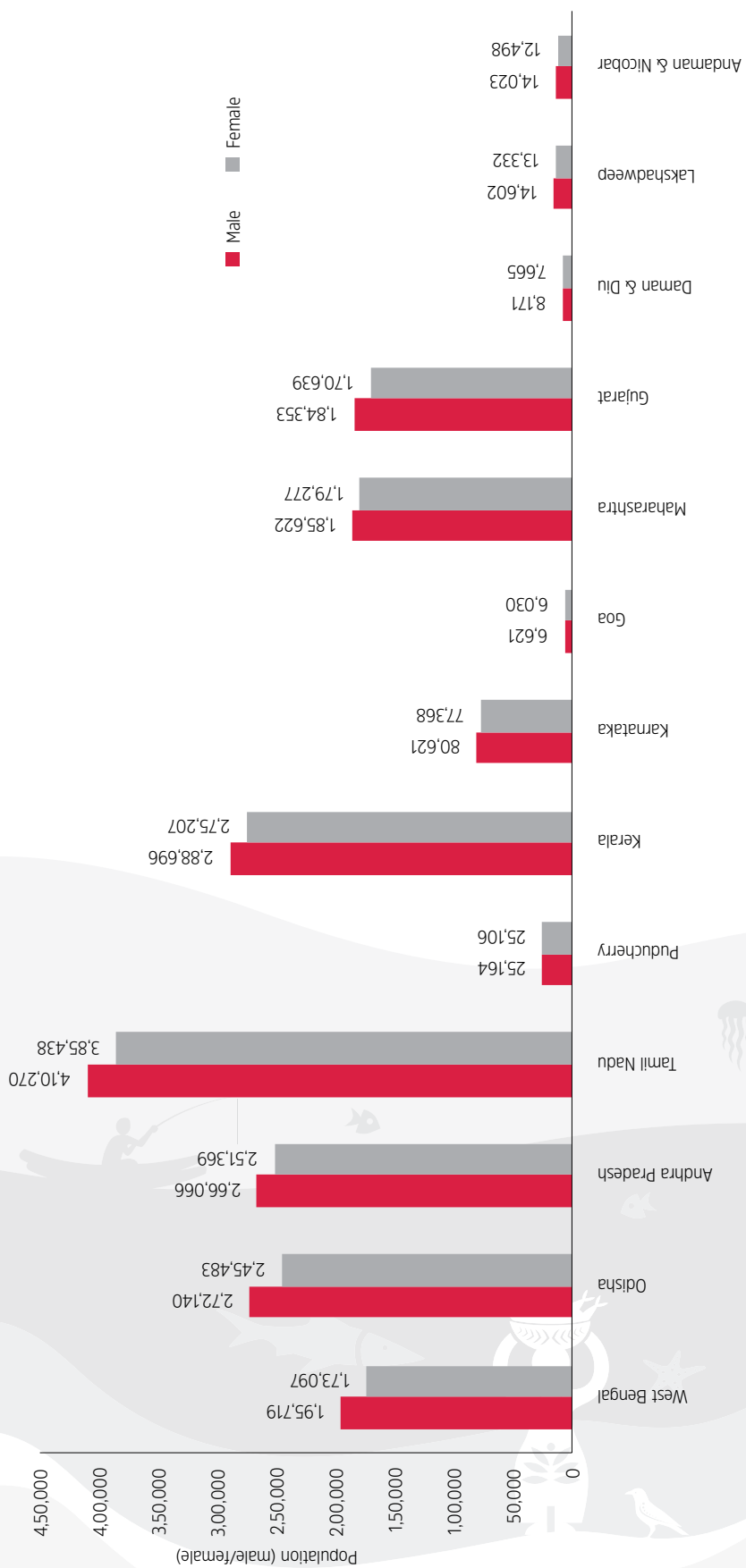


TABLE 4. EDUCATIONAL STATUS

State	Primary		Higher Secondary		Above Higher Secondary		Graduation and above	
	Male	Female	Male	Female	Male	Female	Male	Female
West Bengal	76,609	68,789	38,727	30,135	3,654	1,856	1,397	582
Odisha	65,871	60,991	71,201	55,226	11,714	6,602	2,427	1,040
Andhra Pradesh	45,443	43,654	42,802	33,024	12,238	6,130	4,554	1,269
Tamil Nadu	1,23,085	1,09,325	1,01,694	91,637	28,534	26,287	22,561	23,315
Puducherry	7,256	6,874	5,339	4,604	1,585	1,189	1,481	1,479
Kerala	94,951	88,676	1,02,220	93,907	21,654	20,159	7,382	10,049
Karnataka	23,591	22,619	25,611	20,480	7,198	6,160	3,294	3,416
Goa	1,188	1,181	2,854	2,134	654	564	331	396
Maharashtra	48,892	52,697	69,506	54,458	12,965	8,862	5,128	4,214
Gujarat	40,633	35,302	35,932	26,514	7,528	4,901	2,117	1,339
Daman & Diu	1,729	1,437	4,003	3,390	437	211	251	108
Lakshadweep	2,596	2,491	3,159	2,862	1,118	944	525	554
Andaman & Nicobar	3,816	3,156	2,622	2,173	841	623	301	222
<b>Total</b>	<b>5,35,660</b>	<b>4,97,192</b>	<b>5,05,670</b>	<b>4,20,544</b>	<b>1,10,120</b>	<b>84,488</b>	<b>51,749</b>	<b>47,983</b>

Fig. 8. Educational status of fisherfolk in different states & U. T.s

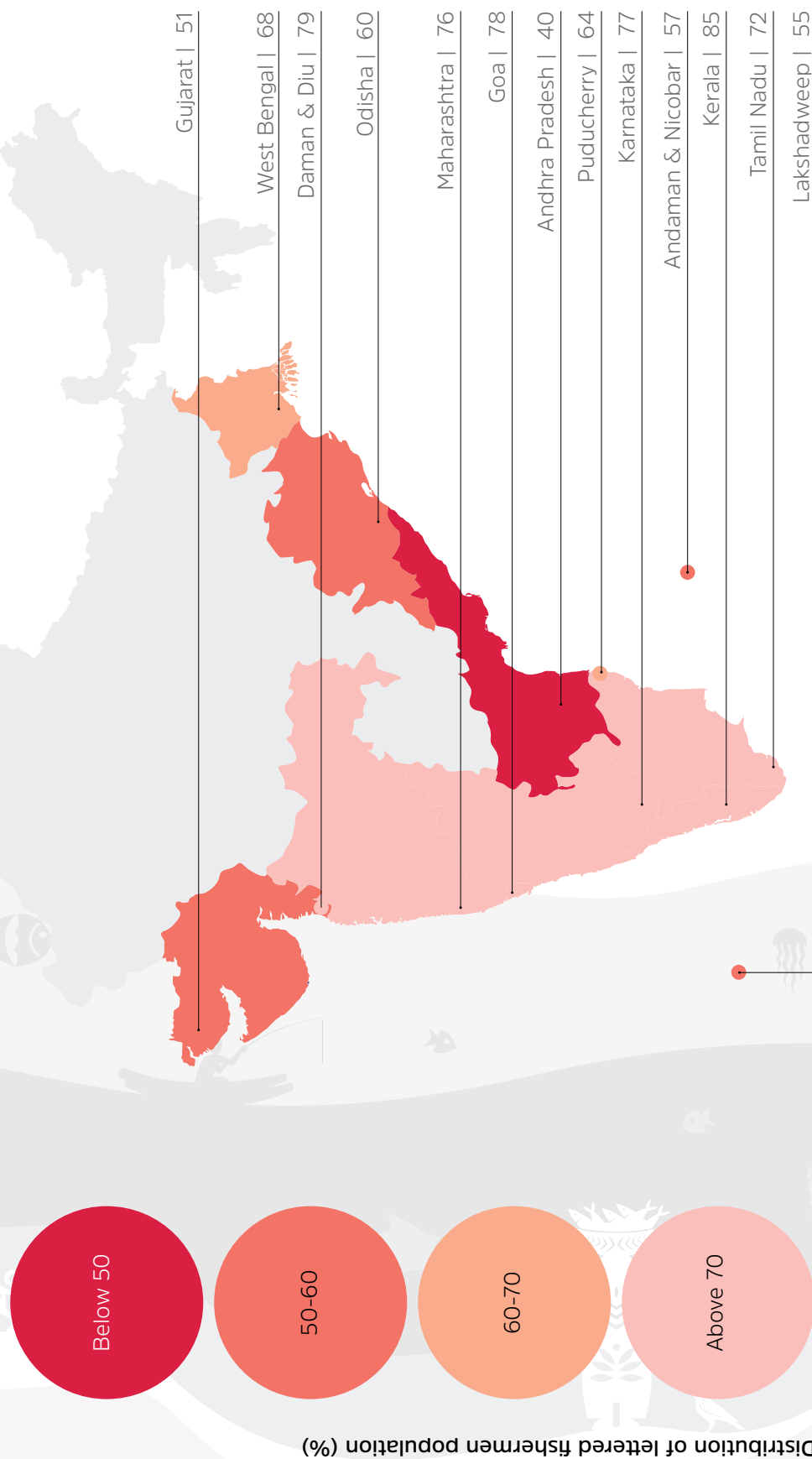


Fig. 9. Level of education among fisherfolk in different states & U. T.s

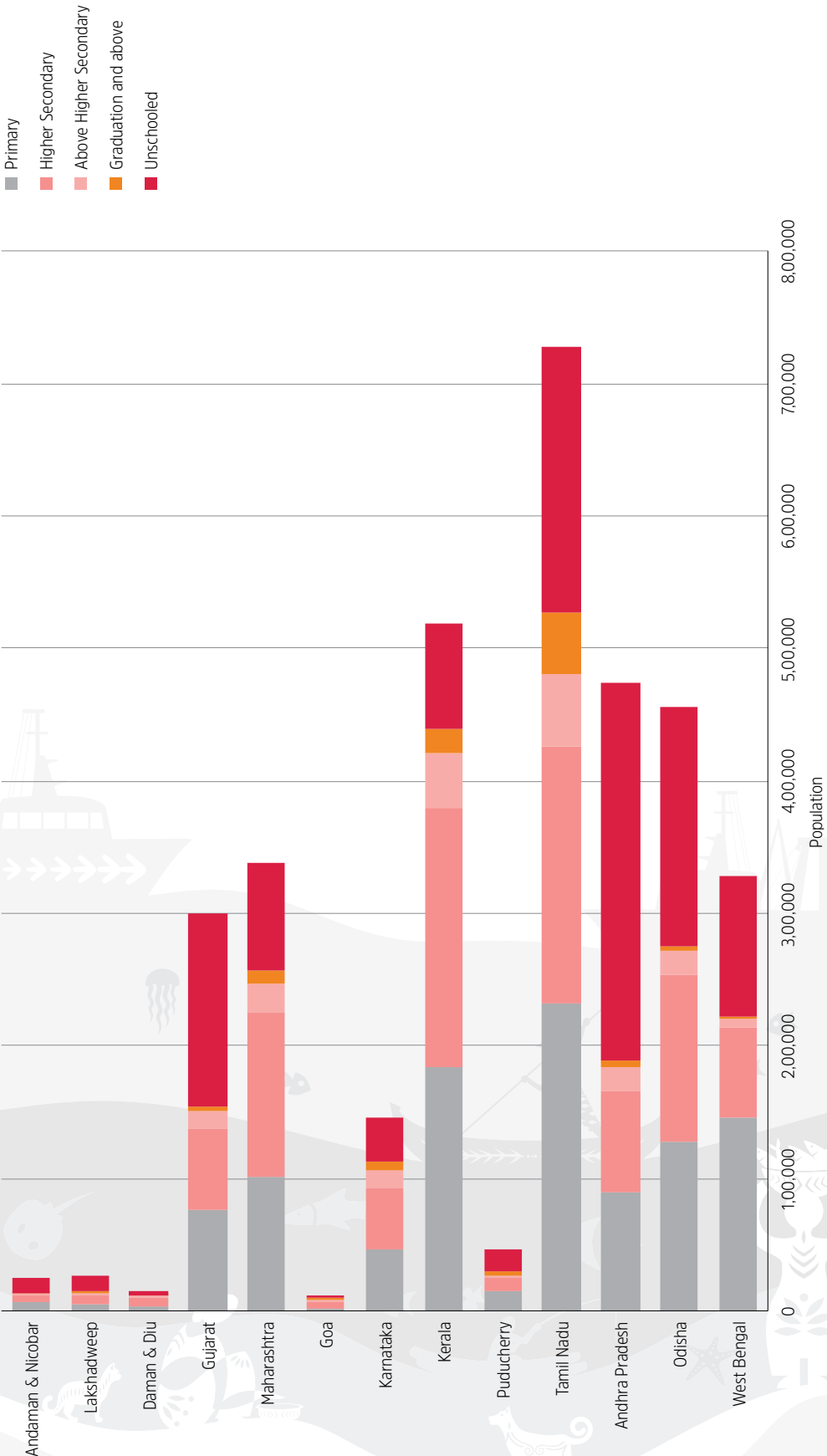


Fig. 10. Level of education among male fisherfolk

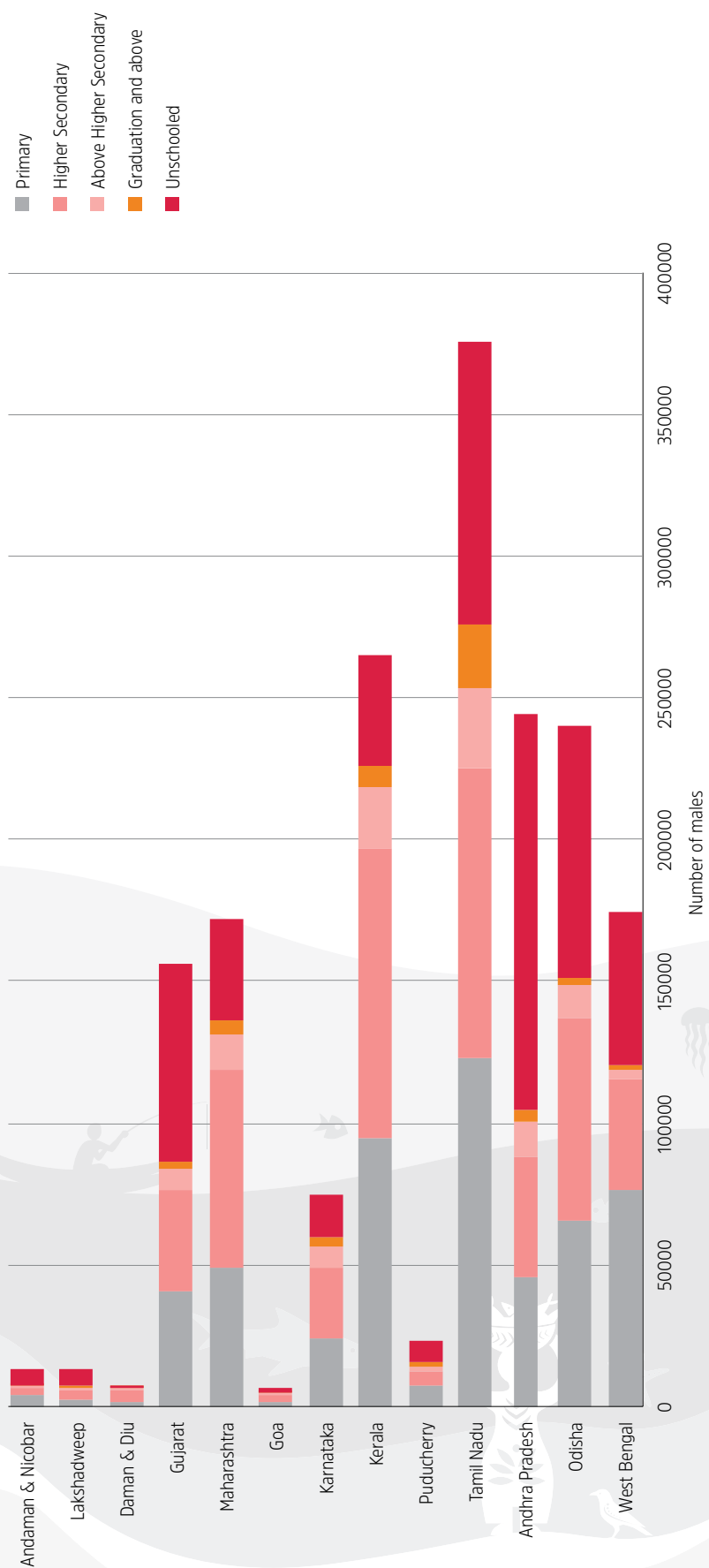


Fig. 11. Level of education among female fisherfolk

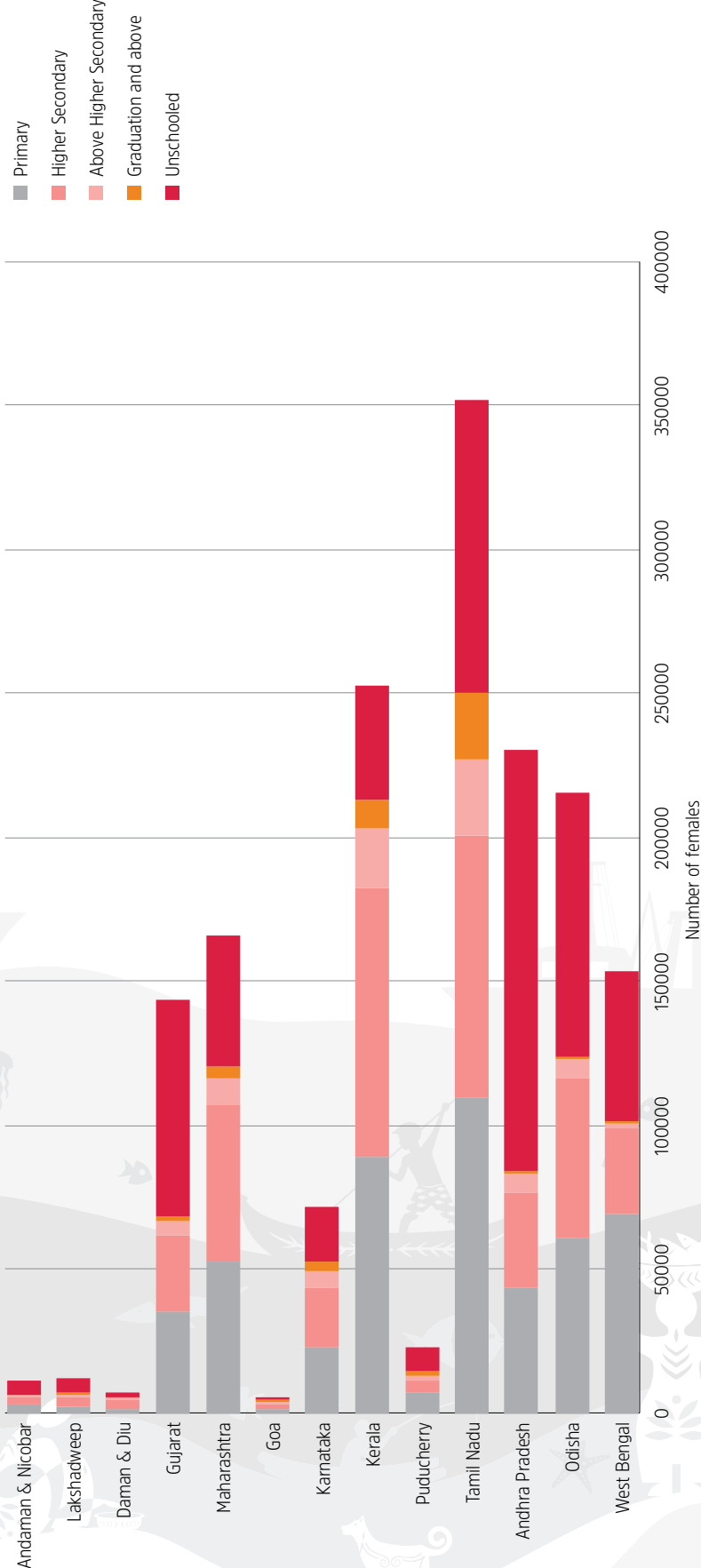


TABLE 5. ACTIVE FISHERFOLK

State	Actual fishing		Fish seed collection				Total
	Full time	Part time	Full time		Part time		
			Male	Female	Male	Female	
West Bengal	50,662	32,859	1,040	1,765	1,499	4,516	92,341
Odisha	80,350	31,019	2,126	2,041	1,220	2,197	1,18,953
Andhra Pradesh	1,20,005	14,712	438	290	216	417	1,36,078
Tamil Nadu	2,00,690	17,661	55	26	60	202	2,18,694
Puducherry	11,501	974	6	2	8	2	12,493
Kerala	1,20,706	15,264	549	126	96	507	1,37,248
Karnataka	32,222	3,057	66	26	85	46	35,502
Goa	1,778	933	22	12	6	7	2,758
Maharashtra	60,258	15,515	365	301	117	372	76,928
Gujarat	59,616	15,918	796	568	593	452	77,943
Daman & Diu	3,683	95	81	1	5	2	3,867
Lakshadweep	2,415	3,983	47	0	25	18	6,488
Andaman & Nicobar	4,593	1,978	472	120	305	320	7,788
Total	7,48,479	1,53,968	6,063	5,278	4,235	9,058	9,27,081



Fig. 12. Fisherfolk involved in actual fishing

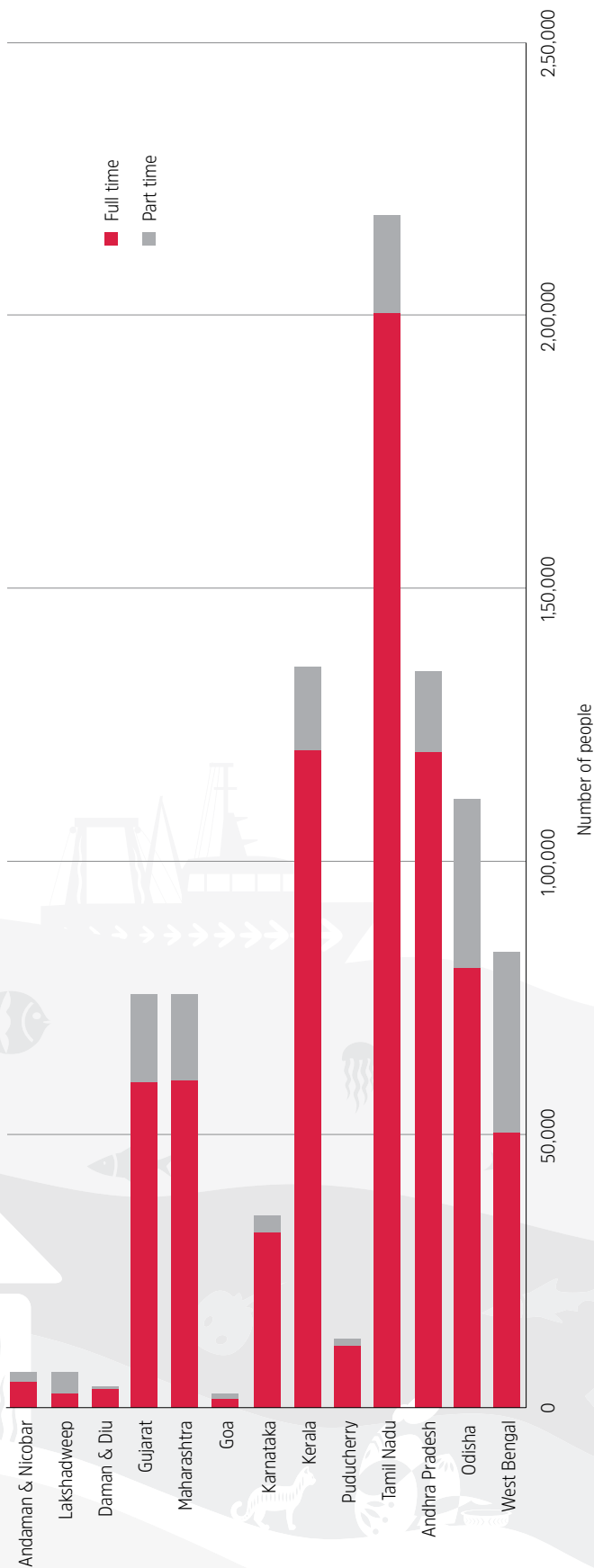


Fig. 13. Fisherfolk involved in fish seed collection

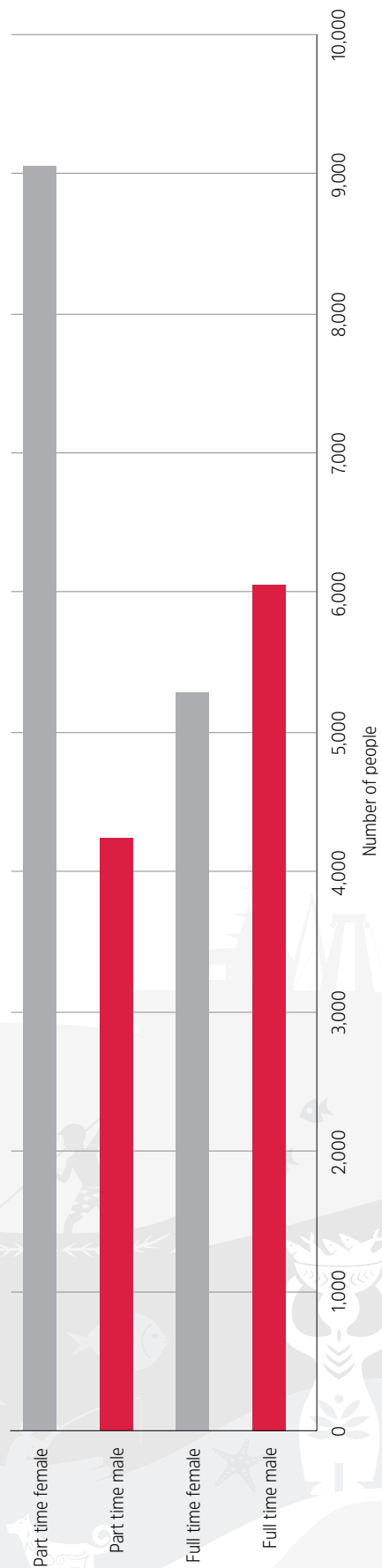


TABLE 6. OCCUPATION PROFILE

State	Active fishermen	No. of members involved in fishing allied activities						Other than fishing	Total occupied
		Marketing of fish	Making/Repairing Net	Curing/Processing	Peeling	Labourer	Others		
West Bengal	92,341	4,294	18,056	1,786	1,462	6,784	238	291	1,25,252
Odisha	1,18,953	20,225	9,321	7,504	4,690	16,222	10,711	6,876	1,94,502
Andhra Pradesh	1,36,078	29,322	4,506	14,736	3,254	32,489	4,406	15,128	2,39,919
Tamil Nadu	2,18,694	35,835	9,182	6,783	4,068	16,519	4,921	17,692	3,13,694
Puducherry	12,493	3,444	332	250	65	2,328	401	1,197	20,510
Kerala	1,37,248	18,663	2,529	8,506	21,177	5,399	8,473	9,672	2,11,667
Karnataka	35,502	14,208	484	330	2,070	6,046	1,654	5,912	66,206
Goa	2,758	1,635	206	5	2	185	710	782	6,283
Maharashtra	76,928	56,553	5,031	6,202	3,563	10,980	12,523	12,042	1,83,822
Gujarat	77,943	23,178	4,234	1,491	5,051	19,069	1,876	6,821	1,39,663
Daman & Diu	3,867	509	7	4	1	110	1	131	4,630
Lakshadweep	6,488	738	310	674	703	128	0	1,848	10,889
Andaman & Nicobar	7,788	1,633	465	21	52	222	0	1,191	11,372
<b>Total</b>	<b>9,27,081</b>	<b>2,10,237</b>	<b>54,663</b>	<b>48,292</b>	<b>46,158</b>	<b>1,16,481</b>	<b>45,914</b>	<b>79,583</b>	<b>15,28,409</b>

Fig. 14. Occupational profile of marine fisherfolk

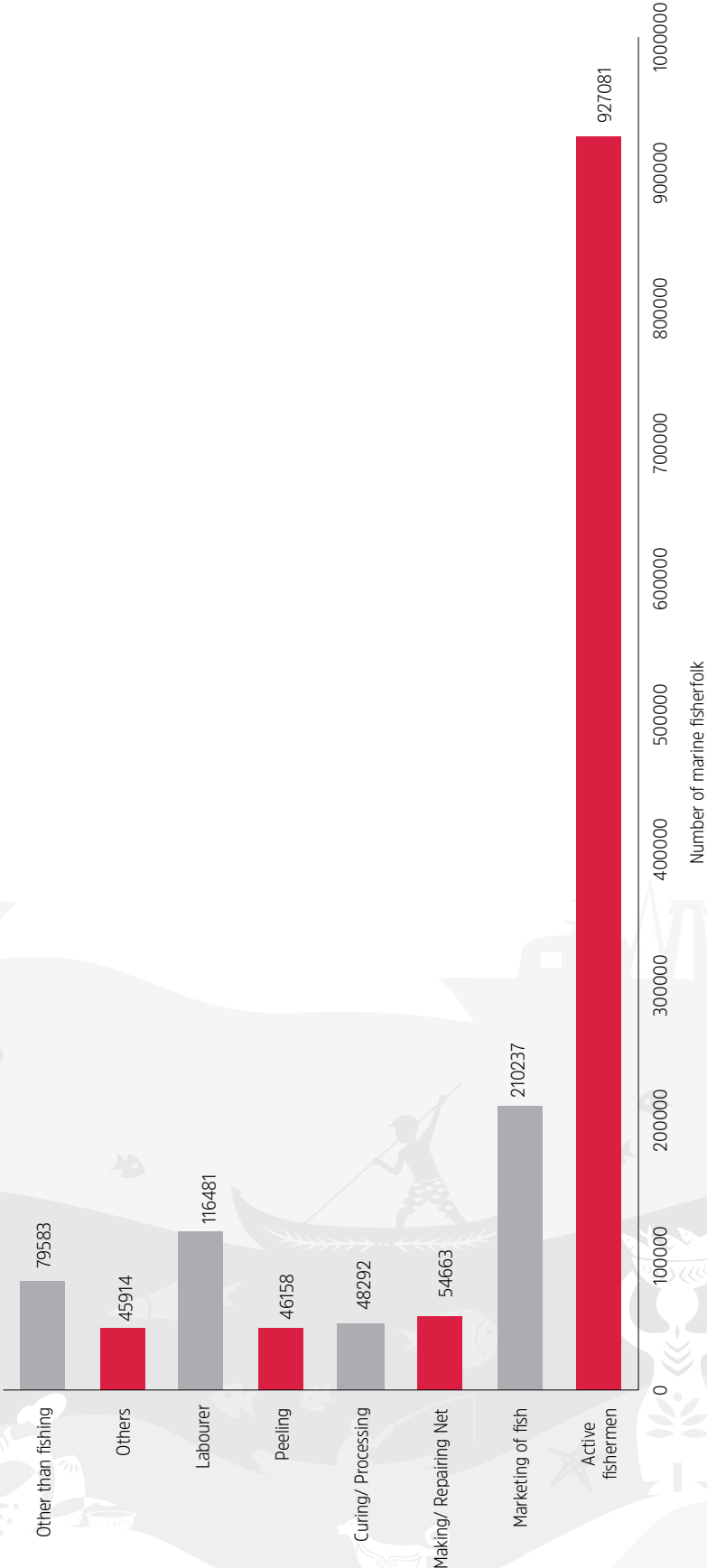


TABLE 7. GENDER-WISE FISHING ALLIED ACTIVITIES

State	Marketing of fish		Making/ Repairing Net		Curing/ Processing		Peeling		Labourer		Others*	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
West Bengal	2,148	2,146	2,702	15,354	534	1,252	402	1,060	3,670	3,114	149	89
Odisha	7,443	12,782	6,293	3,028	721	6,783	291	4,399	7,268	8,954	2,982	7,729
Andhra Pradesh	4,374	24,948	3,908	598	1,039	13,697	255	2,999	4,982	27,507	2,112	2,294
Tamil Nadu	2,337	33,498	5,164	4,018	880	5,903	432	3,636	10,345	6,174	2,221	2,700
Puducherry	69	3,375	310	22	20	230	19	46	1,847	481	275	126
Kerala	3,034	15,629	1,038	1,491	332	8,174	253	20,924	3,793	1,606	5,166	3,307
Karnataka	1,506	12,702	388	96	126	204	159	1,911	4,550	1,496	1,117	537
Goa	105	1,530	189	17	5	0	1	1	168	17	288	422
Maharashtra	2,950	53,603	3,659	1,372	192	6,010	225	3,338	7,689	3,291	4,201	8,322
Gujarat	3,703	19,475	1,894	2,340	621	870	424	4,627	9,371	9,698	1,215	661
Daman & Diu	3	506	4	3	4	0	0	0	80	32	0	0
Lakshadweep	306	432	245	65	179	495	19	684	104	24	0	0
Andaman & Nicobar	573	1,060	341	124	16	5	34	18	104	118	0	0
<b>Total</b>	<b>28,551</b>	<b>1,81,686</b>	<b>26,135</b>	<b>28,528</b>	<b>4,669</b>	<b>43,623</b>	<b>2,514</b>	<b>43,643</b>	<b>53,971</b>	<b>62,512</b>	<b>19,726</b>	<b>26,187</b>

\*Includes persons engaged in auctioning, ice breaking, collection of bivalves, collection of other shells, collection of seaweed, collection of ornamental fish etc.

Fig. 15. Gender-wise fishing allied activities

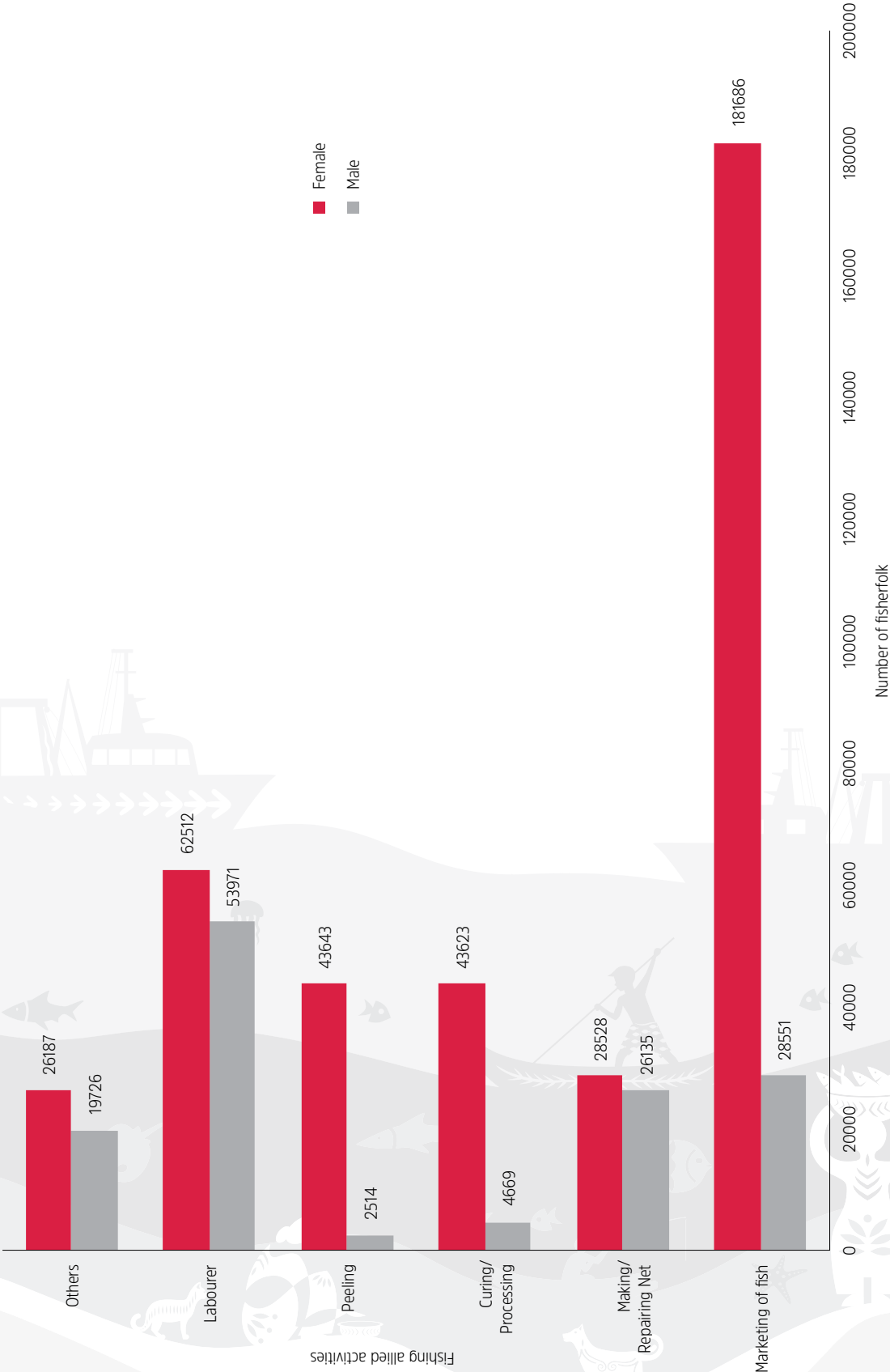


TABLE 8. RELIGION AND COMMUNITY (No. of families)

State	Religion			Total	Community
	Hinduism	Islam	Christianity	Others	SC/ST
West Bengal	73,012	7,947	88	20	81,067
Odisha	1,11,957	1,695	1,576	0	1,15,228
Andhra Pradesh	1,49,230	152	5,678	2	1,55,062
Tamil Nadu	1,15,538	12,733	73,570	14	2,01,855
Puducherry	14,279	34	34	0	14,347
Kerala	39,549	33,306	48,782	0	1,21,637
Karnataka	28,937	3,137	405	0	32,479
Goa	1,864	29	1,093	0	2,986
Maharashtra	72,179	8,521	6,929	88	87,717
Gujarat	50,232	17,336	11	31	67,610
Daman & Diu	3,147	15	1	0	3,163
Lakshadweep	0	4,163	0	0	4,163
Andaman & Nicobar	4,073	73	1,798	0	5,944
<b>Total</b>	<b>6,63,997</b>	<b>89,141</b>	<b>1,39,965</b>	<b>155</b>	<b>8,93,258</b>
					<b>1,40,909</b>

Fig. 16. Religion profile of marine fishermen families

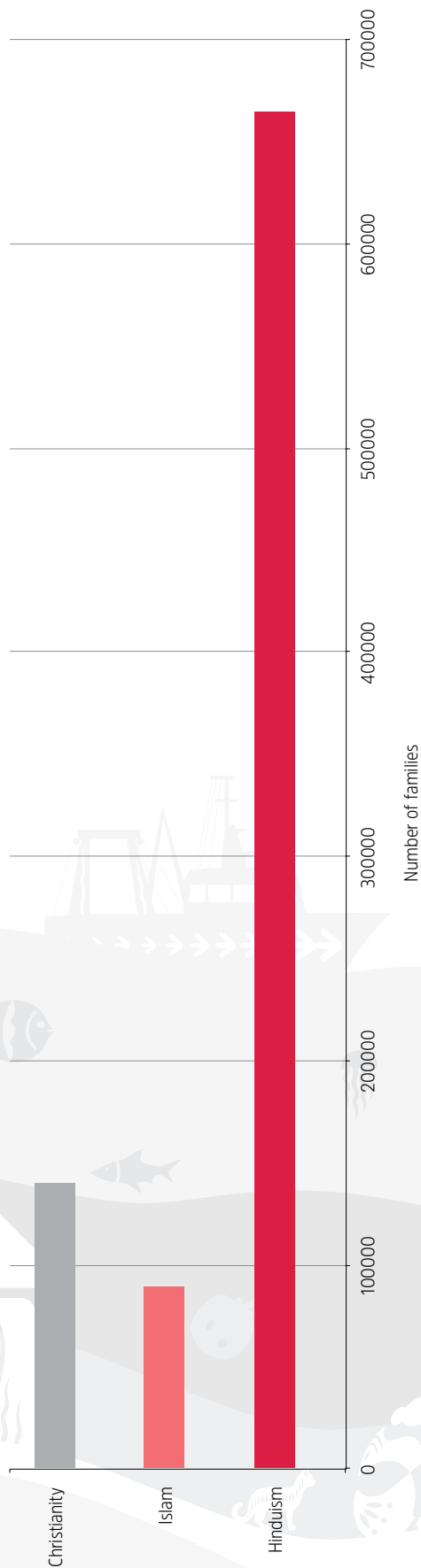


Fig. 17. State-wise profile of SC/ST families

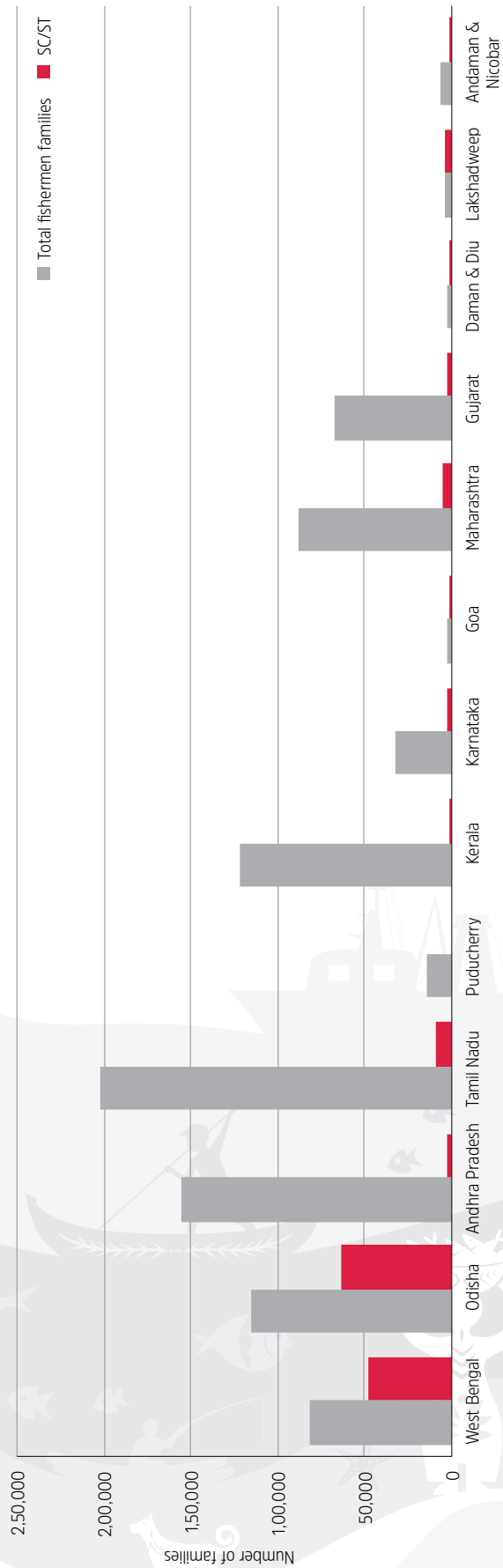


TABLE 9. MEMBERSHIP IN CO-OPERATIVES

State	Members in		Total
	Fisheries co-operatives	Other co-operatives	
West Bengal	9,810	6,268	16,078
Odisha	23,837	28,186	52,023
Andhra Pradesh	44,488	89,463	1,33,951
Tamil Nadu	3,39,607	34,463	3,74,070
Puducherry	23,329	2,191	25,520
Kerala	1,42,035	67,534	2,09,569
Karnataka	43,395	13,359	56,754
Goa	1,557	500	2,057
Maharashtra	72,289	12,019	84,308
Gujarat	5,795	235	6,030
Daman & Diu	802	137	939
Lakshadweep	320	2,157	2,477
Andaman & Nicobar	569	193	762
<b>Total</b>	<b>7,07,833</b>	<b>2,56,705</b>	<b>9,64,538</b>





Fig. 18. State-wise membership in co-operatives

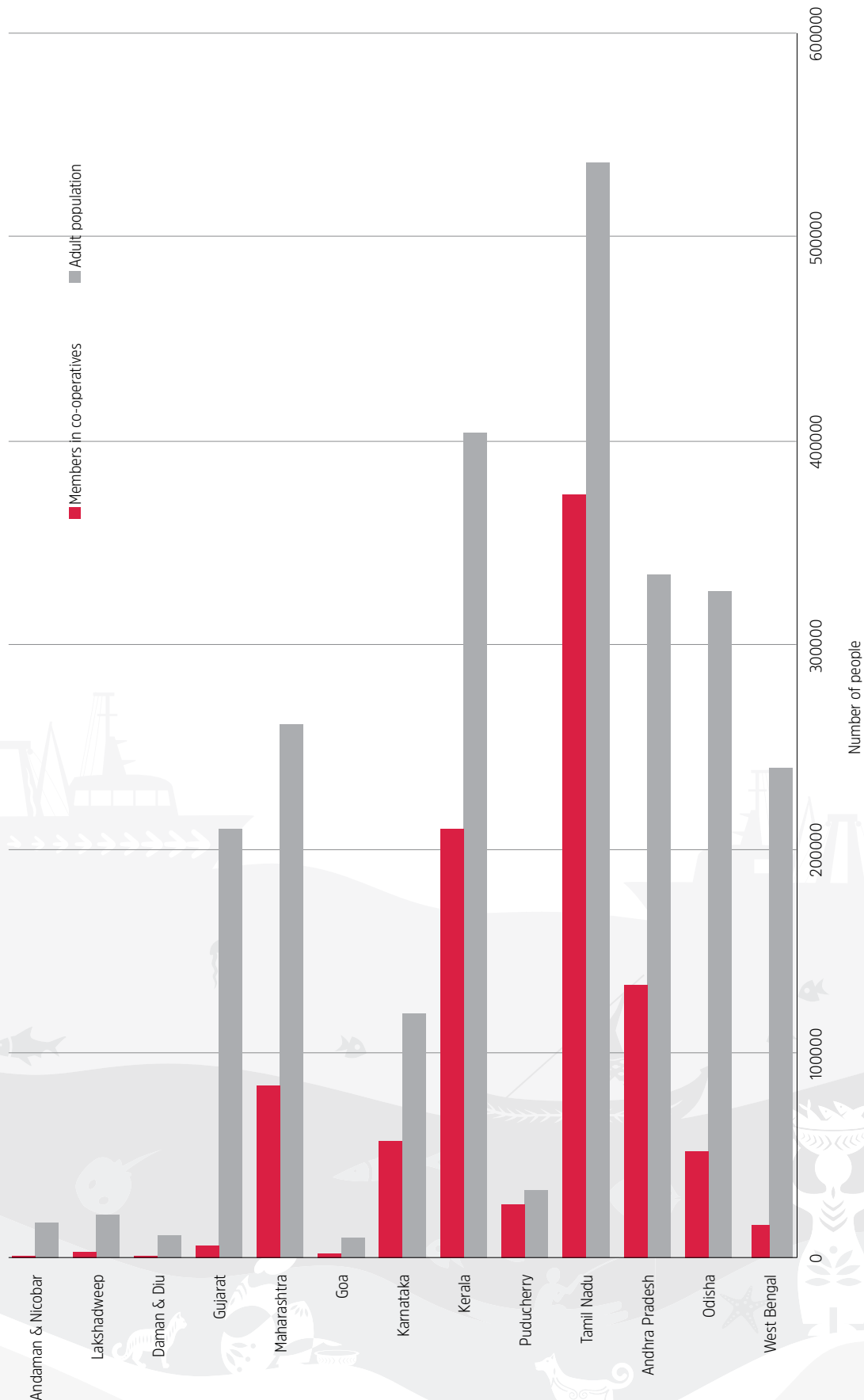


TABLE 10. FISHERMEN FAMILIES ENGAGED IN AQUACULTURE

State	Type of aquaculture					Acquired training	
	Fish	Prawn	Crab	Mussel	Others		Total
West Bengal	761	406	65	0	17	1,249	845
Odisha	1,369	1,383	13	1	84	2,850	663
Andhra Pradesh	365	2,151	460	1	26	3,003	287
Tamil Nadu	47	9	1	0	168	225	553
Puducherry	6	1	1	0	0	8	221
Kerala	129	46	11	29	14	229	52
Karnataka	19	45	0	4	2	70	441
Goa	9	0	13	0	34	56	1
Maharashtra	699	223	296	24	39	1,281	215
Gujarat	89	351	13	0	57	510	1,092
Daman & Diu	0	1	0	0	0	1	44
Lakshadweep	8	0	0	0	0	8	0
Andaman & Nicobar	137	0	3	0	2	142	14
Total	3,638	4,616	876	59	443	9,632	4,428

Fig. 19. State-wise details of fishermen families engaged in aquaculture

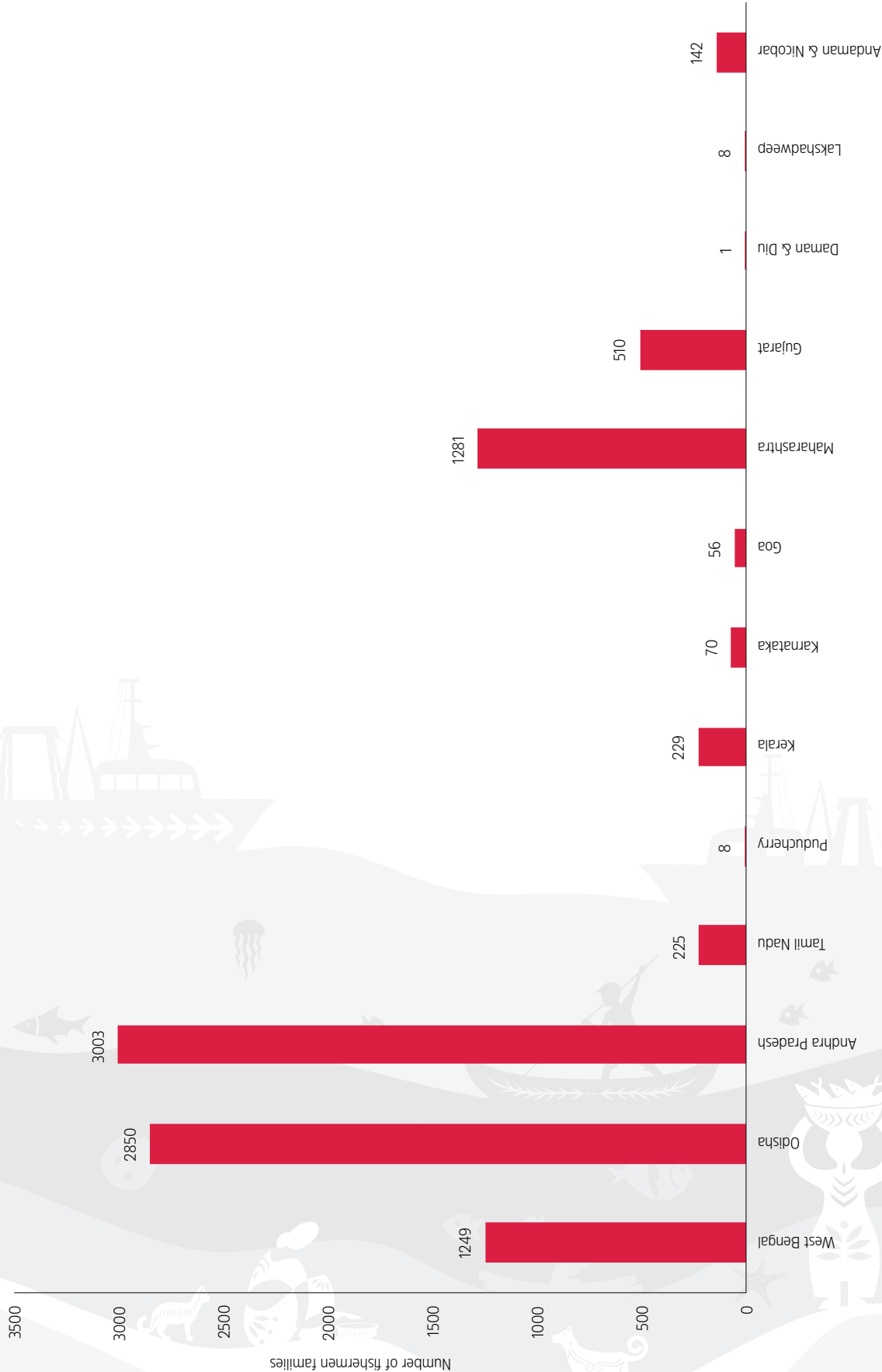


TABLE 11. LIFE SAVING EQUIPMENT &amp; ELECTRONIC EQUIPMENT (No. of families)

State	Life saving equipment	Electronic /Communication gadgets				
		Mobile phone	GPS	Radio phone	Echo sounder	Others
West Bengal	16,944	65,205	573	1,013	17	18
Odisha	6,120	99,022	593	15	0	139
Andhra Pradesh	10,604	76,416	2,181	320	548	54
Tamil Nadu	42,200	1,55,134	9,628	988	2,263	437
Puducherry	2,054	11,560	402	148	109	18
Kerala	25,369	53,336	5,169	821	1,643	562
Karnataka	8,525	27,032	2,082	195	783	651
Goa	1,179	1,851	94	2	1	104
Maharashtra	22,236	43,764	2,671	454	8	446
Gujarat	27,466	52,101	3,206	1,359	53	331
Daman & Diu	2,613	2,606	756	577	0	171
Lakshadweep	1,130	1,824	261	2	0	32
Andaman & Nicobar	3,714	4,710	144	5	2	129
Total	1,70,154	5,94,561	27,760	5,899	5,427	3,092

Fig. 20. State-wise details of life saving equipment & electronic gadgets (No. of families)

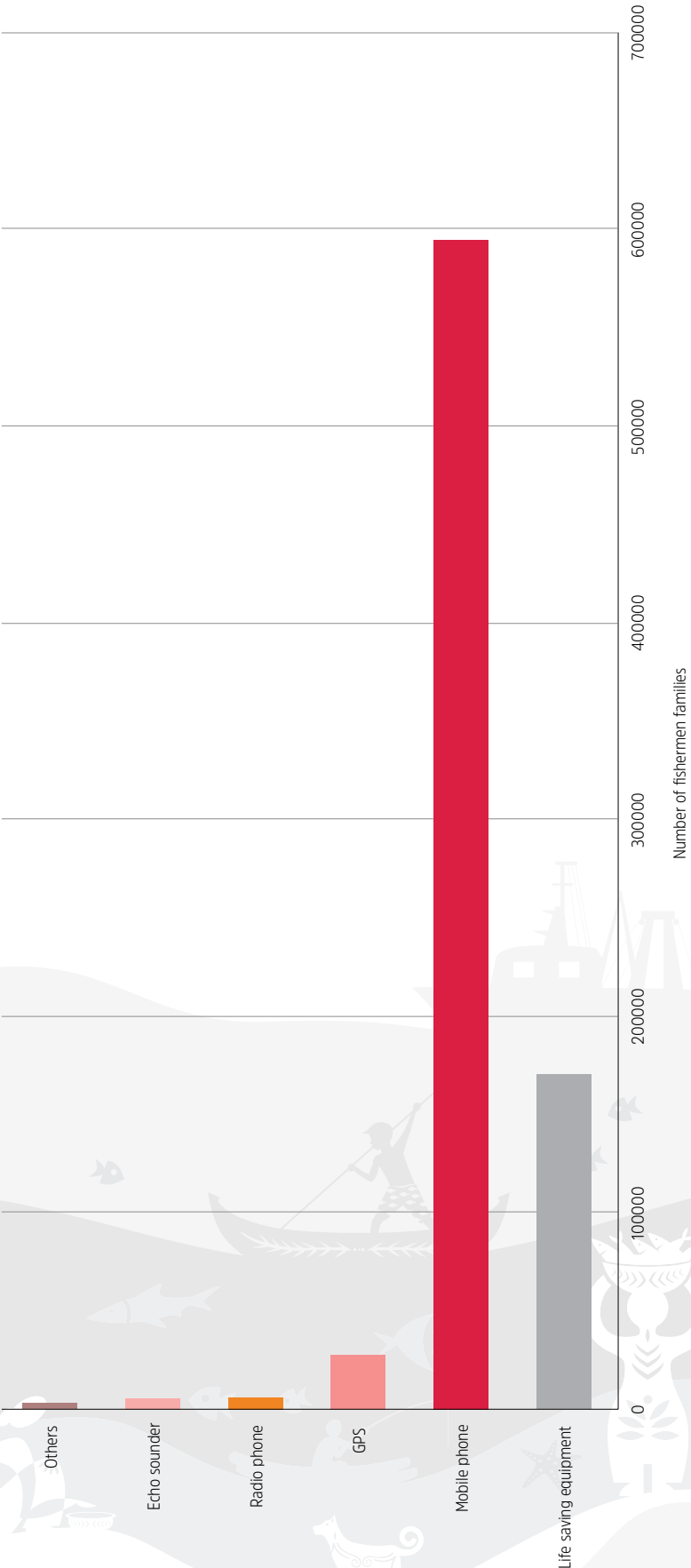
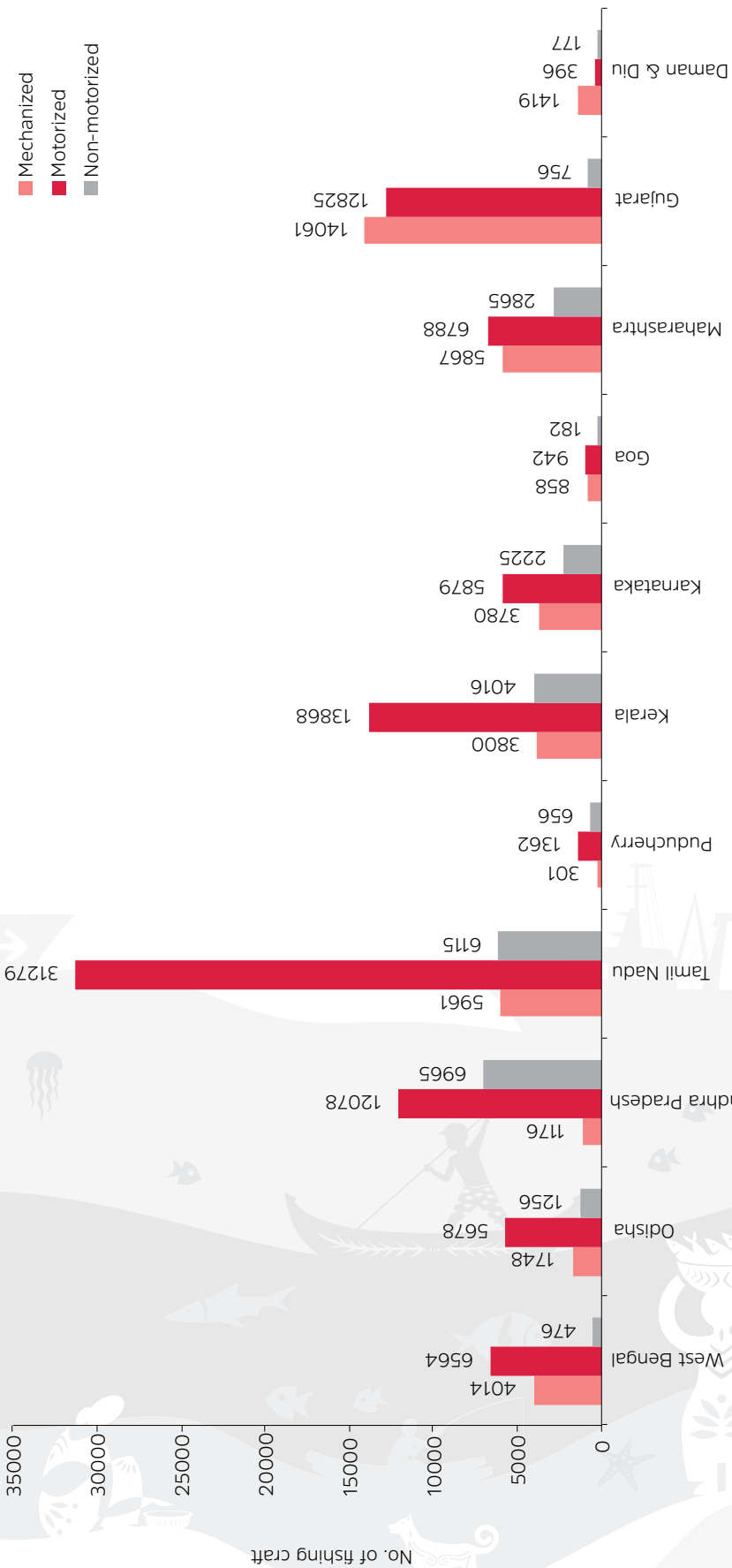


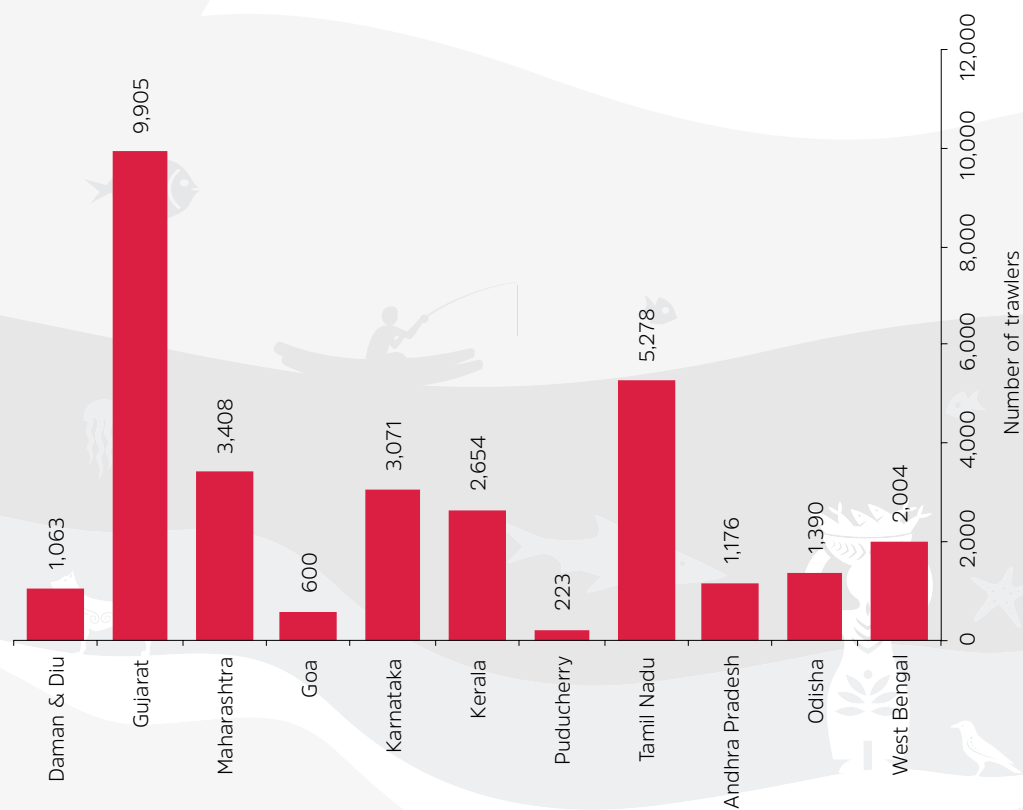
TABLE 12. **FISHING CRAFTS IN THE FISHERY** (excluding Lakshadweep and Andaman & Nicobar Islands)

State	Mechanized										Motorized			Non-motorized	Total
	Trawlers	Gillnetters	Dolnetters/ Bagnetters	Liners	Ring seiners	Purse-seiners	Others	Total Mechanized	Inboard	Outboard	Total Motorized				
West Bengal	2,004	1,764	191	31	0	0	0	24	4,014	6,564	0	6,564	476	11,054	
Odisha	1,390	358	0	0	0	0	0	0	1,748	2,443	3,235	5,678	1,256	8,682	
Andhra Pradesh	1,176	0	0	0	0	0	0	0	1,176	3,146	8,932	12,078	6,965	20,219	
Tamil Nadu	5,278	441	0	16	219	0	0	7	5,961	8,945	22,334	31,279	6,115	43,355	
Puducherry	223	0	0	0	78	0	0	0	301	387	975	1,362	656	2,319	
Kerala	2,654	417	0	2	646	81	0	0	3,800	0	13,868	13,868	4,016	21,684	
Karnataka	3,071	40	0	0	0	669	0	0	3,780	304	5,575	5,879	2,225	11,884	
Goa	600	0	0	0	0	209	49	0	858	5	937	942	182	1,982	
Maharashtra	3,408	584	1,637	0	0	230	8	0	5,867	5,979	809	6,788	2,865	15,520	
Gujarat	9,905	2,602	1,554	0	0	0	0	0	14,061	3,541	9,284	12,825	756	27,642	
Daman & Diu	1,063	342	14	0	0	0	0	0	1,419	95	301	396	177	1,992	
Total	30,772	6,548	3,396	49	943	1,189	88	42,985	31,409	66,250	97,659	25,689		1,66,333	

Fig. 21. State-wise details of fishing crafts in the fishery (excluding Lakshadweep and Andaman & Nicobar Islands)



**Fig. 22. Trawlers in different maritime states**  
(excluding Lakshadweep and Andaman & Nicobar Islands)



**Fig. 23. Gillnetters in different maritime states**  
(excluding Lakshadweep and Andaman & Nicobar Islands)

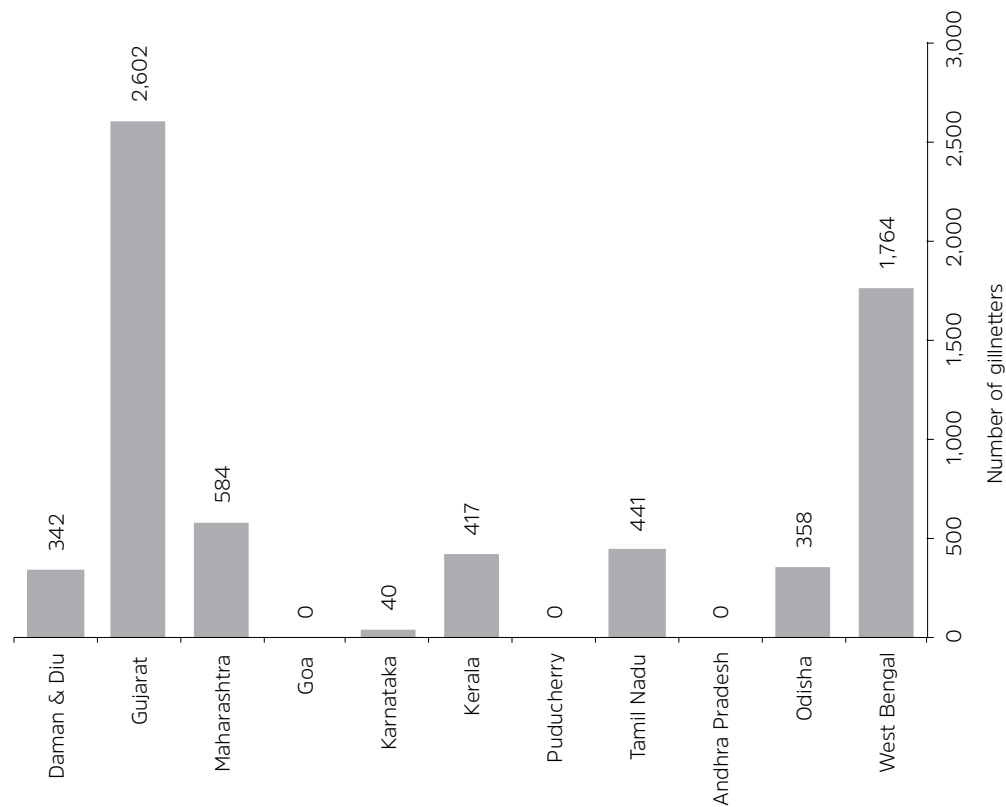




Fig. 24. Fishing craft in the Indian fishery

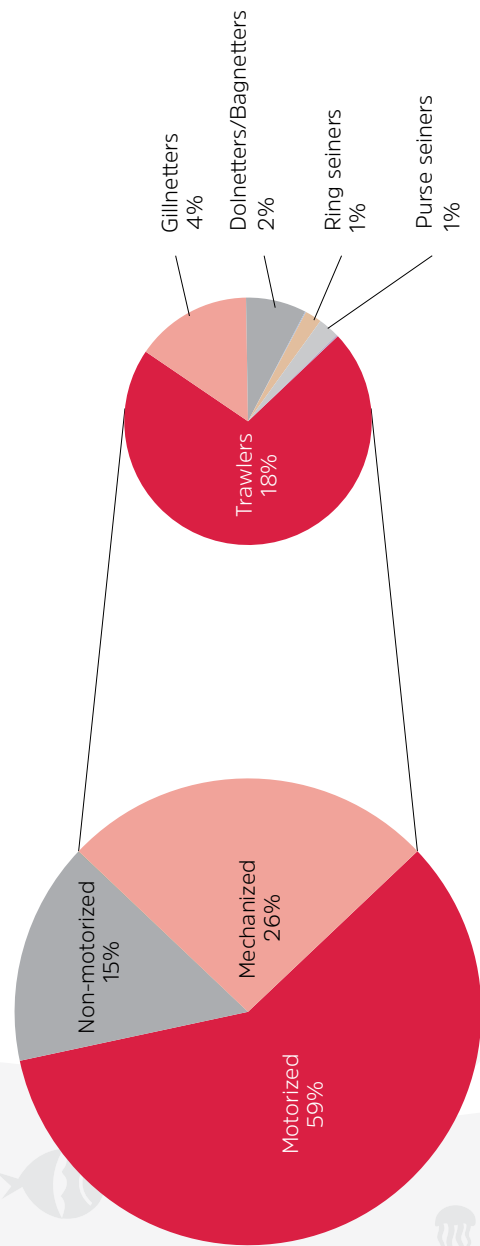


Fig. 25. Seiners in different maritime states (excluding Lakshadweep and Andaman & Nicobar Islands)

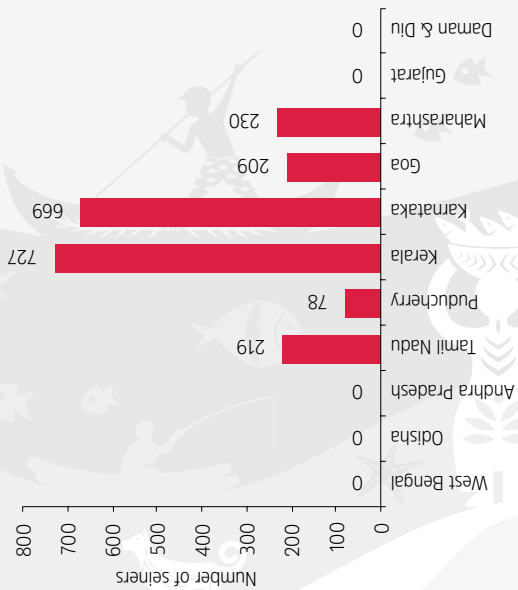


Fig. 26. Dolnetters/Bagnetters in different maritime states (excluding Lakshadweep and Andaman & Nicobar Islands)

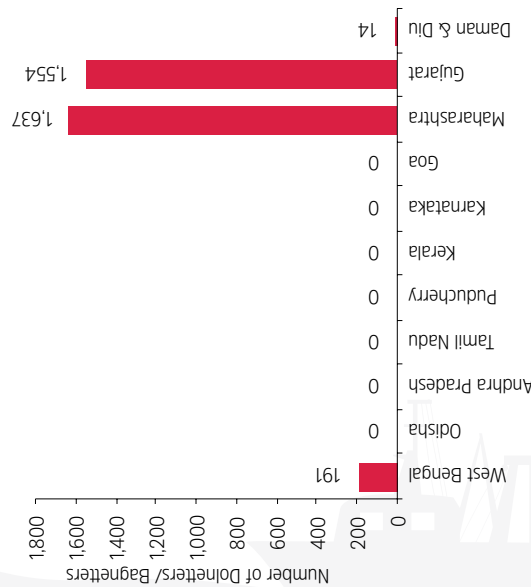


Fig. 27. Liners in different maritime states (excluding Lakshadweep and Andaman & Nicobar Islands)

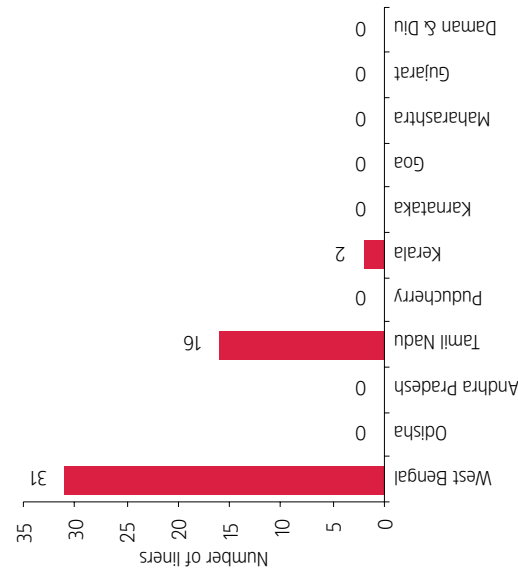


TABLE 13. CRAFT OWNED BY FISHERFOLK (100% OWNERSHIP)

Type	West Bengal	Odisha	Andhra Pradesh	Tamil Nadu	Puducherry	Kerala	Karnataka	Goa	Maharashtra	Gujarat	Daman & Diu	Lakshadweep	Andaman & Nicobar
Mechanized													
Trawler	206	117	994	2,362	167	319	467	109	1,308	3,394	636	1	0
Gillnetter	782	475	37	162	36	29	79	2	384	230	113	0	12
Purseineer	0	0	0	0	0	17	131	42	209	0	19	0	0
Dolnetter/ Bagnetter	246	4	0	0	0	0	0	0	853	717	9	0	0
Ringseiner	0	0	14	61	10	193	2	0	0	1	0	0	0
Liner	10	7	3	25	0	1	2	0	0	1	0	0	17
Others	37	5	10	20	15	7	6	0	121	10	0	1	0
Inboard													
Wooden built	2,965	918	189	1,527	31	0	237	13	1,865	699	0	239	397
Iron built	2	18	23	57	5	0	14	0	30	10	0	1	25
Wood fibre	27	753	2,837	864	125	0	213	8	3,001	4,115	193	104	687
Others	2	1	30	54	12	0	1	1	352	89	0	5	32
Outboard													
Catamaran	0	5	725	1,079	122	462	25	3	15	35	0	27	36
Dugout canoe	0	409	114	98	10	249	224	10	45	122	0	8	85
Plank built boat	0	190	154	290	33	1,076	86	211	51	56	0	212	10
Plywood boat	0	2	164	1,311	15	3,889	16	1	17	2	0	22	2

TABLE 13. Contd....

Type	West Bengal	Odisha	Andhra Pradesh	Tamil Nadu	Puducherry	Kerala	Karnataka	Goa	Maharashtra	Gujarat	Daman & Diu	Lakshadweep	Andaman & Nicobar
Fibre glass boat	0	1,366	4,513	15,646	824	2,500	1,374	935	1,155	3,462	129	20	2
Ferro cement boat	0	6	2	40	1	33	20	0	8	15	0	0	0
Teppa	0	66	247	50	16	17	0	0	2	16	0	3	0
Others	0	0	8	416	6	188	14	1	39	5	0	70	94
Non-motorized													
Dugout canoe	1,505	559	310	489	6	946	4,503	241	3,599	1,310	3	2	512
Catamaran	136	741	5,402	9,042	724	1,469	212	0	316	6	0	2	205
Plank built boat	5,490	14,695	3,254	2,268	630	1,211	976	574	2,456	2,400	0	496	888
Ferro cement boat	3	15	8	19	4	68	3	3	133	1	0	0	1
Thermocol	244	434	3,676	1,956	1	1,731	31	0	424	248	0	0	0
Outrigger canoe	2	72	4	3	0	10	476	0	844	2	0	0	0
Masula boat	4	10	1,196	49	1	6	0	0	9	0	0	0	30
Others	1	1,195	255	1,038	58	400	1,122	58	2,677	288	59	179	481

Fig. 28. State-wise fishing crafts owned by fisherfolk (100% ownership)

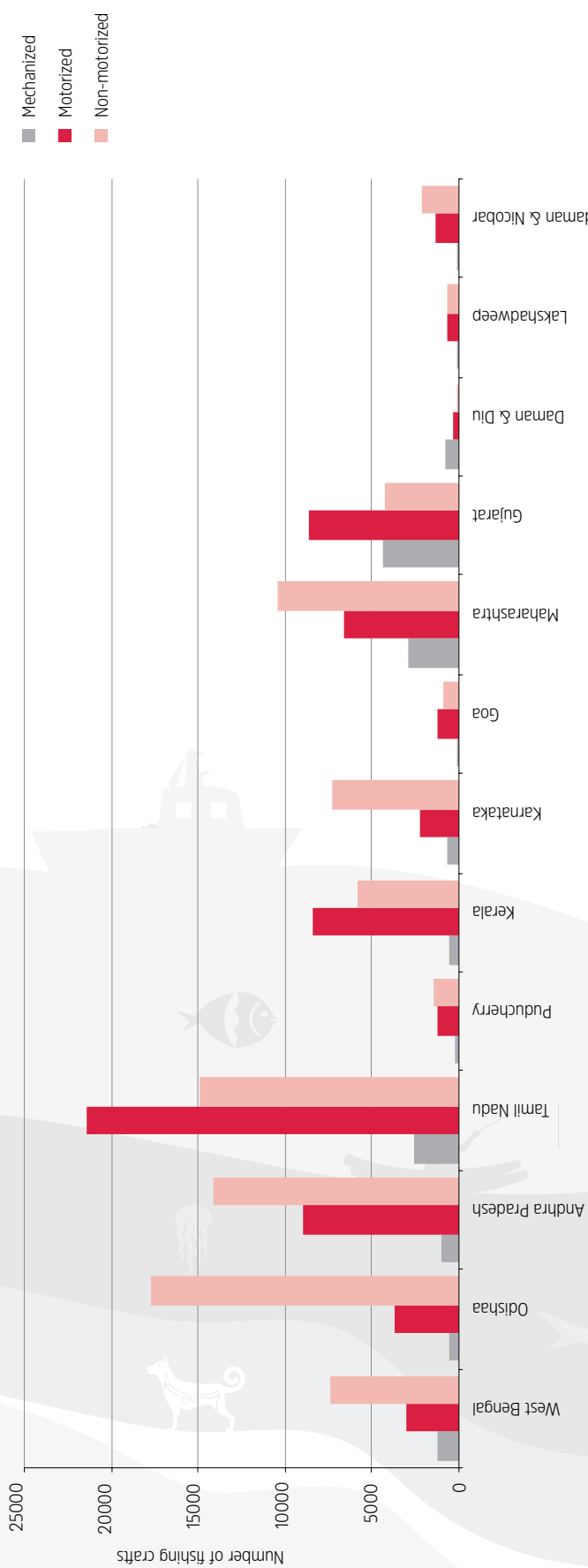


Fig. 29. Mechanized fishing crafts owned by fisherfolk (100% ownership)

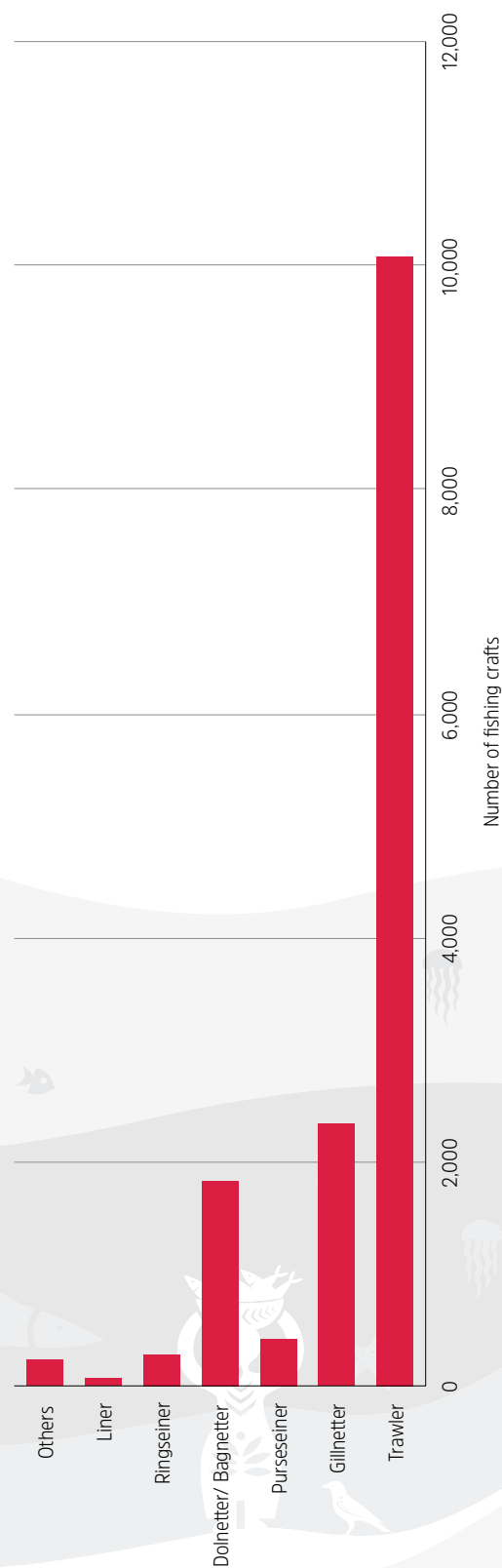


TABLE 14. FAMILIES HAVING &lt;100% OWNERSHIP OF FISHING CRAFT

Type	West Bengal	Odisha	Andhra Pradesh	Tamil Nadu	Puducherry	Kerala	Karnataka	Goa	Maharashtra	Gujarat	Daman & Diu	Lakshadweep	Andaman & Nicobar
Mechanized													
Trawler	40	27	182	1,048	176	474	371	2	510	746	1	0	0
Gillnetter	47	68	22	307	10	46	7	0	65	34	1	0	0
Purseineer	0	0	0	0	0	41	255	24	171	0	0	0	0
Dolnetter/ Bagnetter	12	1	0	0	0	5	0	0	2,136	21	0	0	0
Ringseiner	0	0	33	1,366	521	3,150	25	0	0	0	0	0	0
Liner	1	0	2	16	0	4	2	0	0	0	0	0	4
Others	3	0	1	3	1	0	3	0	58	0	0	1	0
Inboard													
Wooden built	452	180	117	425	14	0	79	1	855	80	0	56	184
Iron built	3	7	8	95	1	0	26	0	27	9	0	0	5
Wood fibre	4	520	3,598	205	35	0	56	0	924	515	1	28	189
Others	0	0	12	626	4	0	0	0	112	2	0	0	5
Outboard													
Catamaran	0	3	565	170	33	127	3	0	1	0	0	0	2
Dugout canoe	0	395	153	67	1	75	756	1	17	12	0	0	31
Plank built boat	0	182	82	31	0	777	16	3	15	10	0	29	2
Plywood boat	0	7	396	281	8	1,296	5	0	3	1	0	7	0

TABLE 14. Contd.....

Type	West Bengal	Odisha	Andhra Pradesh	Tamil Nadu	Puducherry	Kerala	Karnataka	Goa	Maharashtra	Gujarat	Daman & Diu	Lakshadweep	Andaman & Nicobar
Fibre glass boat	0	3,170	12,088	8,040	798	3,627	4,060	35	68	465	1	4	0
Ferro cement boat	0	1	4	13	0	3	16	0	3	0	0	0	0
Teppa	0	86	244	19	3	7	0	0	0	0	0	0	0
Others	0	0	13	26	1	52	11	0	1	0	0	10	0
Non-motorized													
Dugout canoe	0	0	0	0	0	80	1	0	0	0	0	0	0
Catamaran	0	0	2	1	0	566	0	0	0	0	0	0	0
Plank built boat	0	0	0	2	0	18	0	0	0	0	0	0	2
Thermocol	0	0	7	0	0	1	0	0	0	0	0	0	0
Outrigger canoe	0	0	0	0	0	1	0	0	0	0	0	0	0
Masula boat	0	0	29	0	0	0	0	0	0	0	0	0	0
Others	0	0	0	0	0	1	0	0	2	0	0	0	0

TABLE 15. PROFILE OF AMENITIES &amp; FACILITIES

State	No. of fishing villages	Villages having								
		Bus stop/stand	Hospitals	Post Offices	Police station	Mob. phone coverage	Cyclone shelter	Jetty facility	Market facility	Auction shed
West Bengal	171	87	55	138	36	163	32	16	45	10
Odisha	739	112	59	201	40	692	287	22	44	20
Andhra Pradesh	533	310	28	41	9	471	271	4	128	15
Tamil Nadu	575	389	130	214	144	510	124	30	141	147
Puducherry	39	39	11	3	5	39	1	2	12	3
Kerala	220	209	165	155	76	220	19	56	146	73
Karnataka	162	151	79	126	56	161	1	19	65	19
Goa	41	35	18	22	10	41	0	6	26	0
Maharashtra	526	432	210	253	134	479	16	89	62	17
Gujarat	280	220	147	140	86	264	43	30	40	9
Daman & Diu	12	11	8	8	7	12	6	7	7	5
Lakshadweep	10	0	10	10	10	10	2	8	5	1
Andaman & Nicobar	169	111	92	50	35	131	40	30	19	4
Total	3,477	2,106	1,012	1,361	648	3,193	842	319	740	323

TABLE 16. INFRASTRUCTURE PROFILE

State	No. of fishing villages	Number of										
		Primary schools	Secondary schools	Colleges	Technical Institutions	Banks	Fisheries Co-operative Societies	Other Co-operative Societies	Community centers	Cinema theatres	Liquor shops	Petrol bunks
West Bengal	171	1,399	248	25	6	106	35	216	48	3	24	24
Odisha	739	778	234	25	13	115	137	470	204	16	234	35
Andhra Pradesh	533	457	211	15	4	34	333	2,646	216	3	209	22
Tamil Nadu	575	436	195	27	18	257	707	870	375	42	97	121
Puducherry	39	39	15	5	2	7	33	19	28	2	22	10
Kerala	220	458	260	39	29	351	276	485	255	48	69	117
Karnataka	162	565	134	41	17	211	40	161	103	5	113	59
Goa	41	70	31	3	0	71	41	41	48	1	825	6
Maharashtra	526	756	266	58	35	323	250	134	422	64	311	83
Gujarat	280	539	216	47	24	184	151	92	194	21	6	85
Daman & Diu	12	32	20	4	7	27	19	11	20	3	188	7
Lakshadweep	10	34	12	4	2	13	5	24	3	0	0	1
Andaman & Nicobar	169	153	77	8	1	53	52	246	101	0	29	30
Total	3,477	5,716	1,919	301	158	1,752	2,079	5,415	2,017	208	2,127	600



Fig. 30. Educational Institutions in maritime states and U. T.s

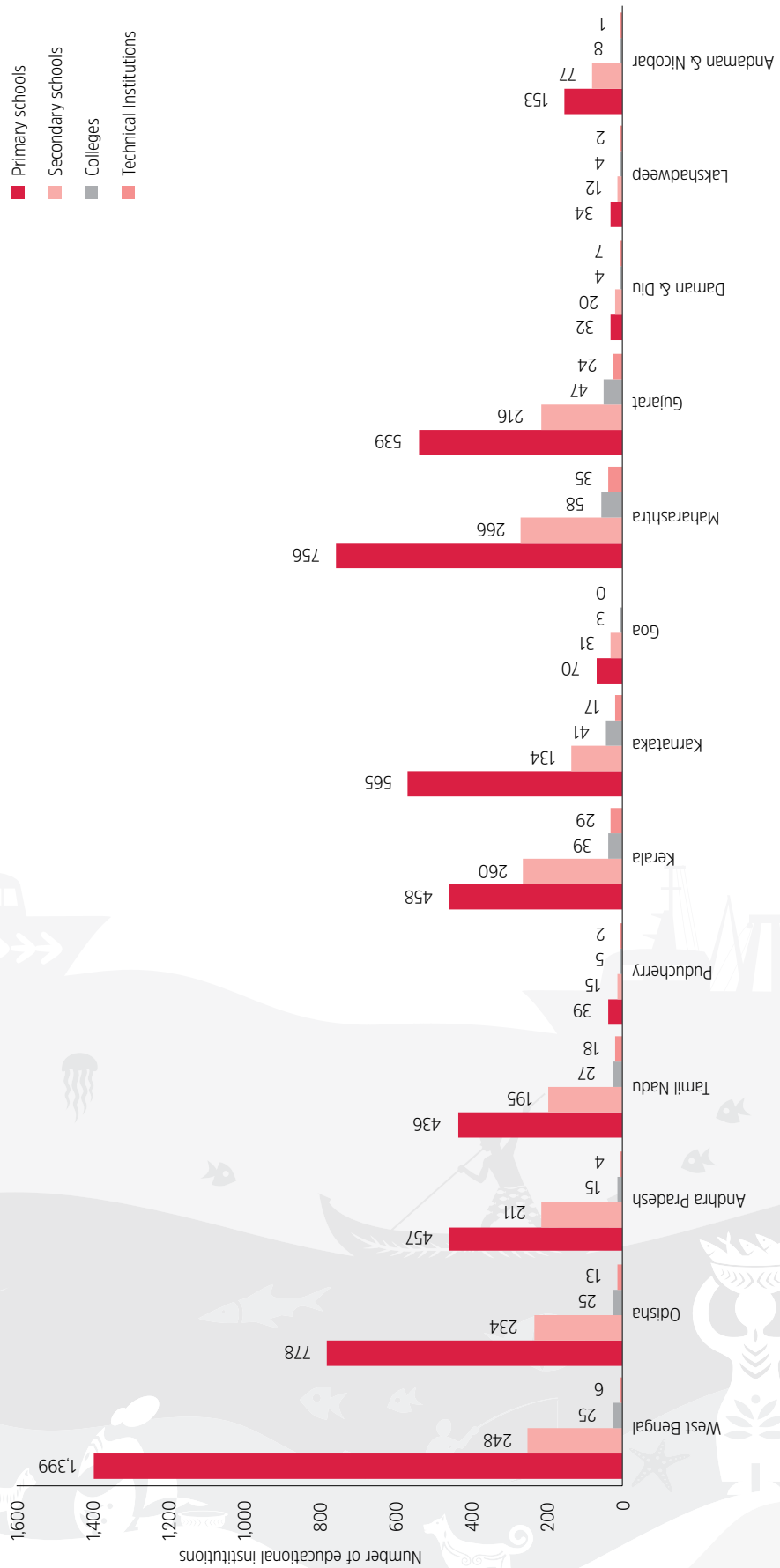
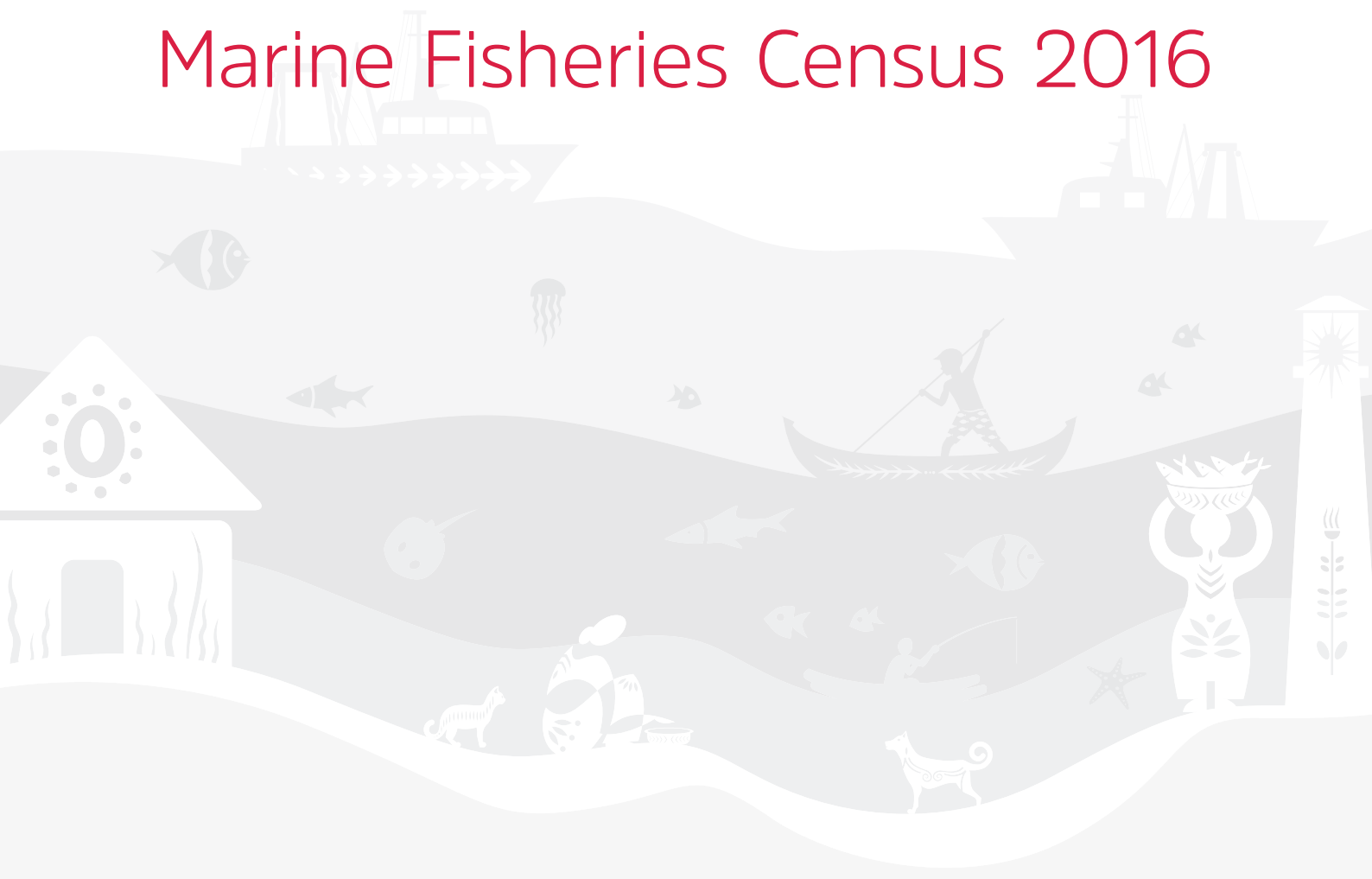


TABLE 17. INFRASTRUCTURE-FISHERY RELATED

State	Boat yards	Cold storages	Ice factories	Freezing plants	Processing plants	Curing yards	Peeling sheds	Extraction Plants	Fish meal plants
West Bengal	35	17	191	1	1	78	0	0	0
Odisha	49	10	54	5	11	21	29	5	1
Andhra Pradesh	5	7	52	4	1	3	5	0	0
Tamil Nadu	80	17	88	14	15	96	112	2	2
Puducherry	11	2	19	0	0	0	0	0	0
Kerala	103	24	327	27	21	44	159	1	1
Karnataka	27	40	136	13	9	13	6	19	19
Goa	2	0	3	0	0	0	0	0	0
Maharashtra	17	5	107	19	14	9	6	0	6
Gujarat	62	102	198	89	86	66	35	17	15
Daman & Diu	4	0	26	2	1	0	0	0	0
Lakshadweep	3	1	4	1	1	0	0	0	0
Andaman & Nicobar	4	3	5	0	0	0	0	0	0
<b>Total</b>	<b>402</b>	<b>228</b>	<b>1,210</b>	<b>175</b>	<b>160</b>	<b>330</b>	<b>352</b>	<b>44</b>	<b>44</b>

# Census Scenes

## Marine Fisheries Census 2016







Aquaculture pond at West Bengal



Boat building yard, Kerala





Boat building yard at Purba Medinipur district in West Bengal



Census in Kerala





Boat building yard at Purba Medinipur district in West Bengal



Census in Gujarat





Census in Maharashtra



Collection of household information, Karnataka







Collection of household information in Kerala



Collection of household information in Kerala





Collection of household information in Kerala



Craft and Gear in Kerala





Craft and gear in Kerala



Data digitization





Discussion with fishermen communities of West Bengal



Enumeration charge to enumerator, Gujarat







Enumerator training in Gujarat



Enumerator training in Kerala





Enumerator training at Kakadweep in West Bengal



Enumerator training at Kakadweep in West Bengal



Enumerator training at Purba Medinipur district in West Bengal



Enumerator training in Andhra Pradesh





Enumerator training, Sreekakulam, Andra Predesh



Fish drying, Purba Medinipur, West Bengal





Fishing craft at Purba Medinipur, West Bengal



Fishing craft in Kerala





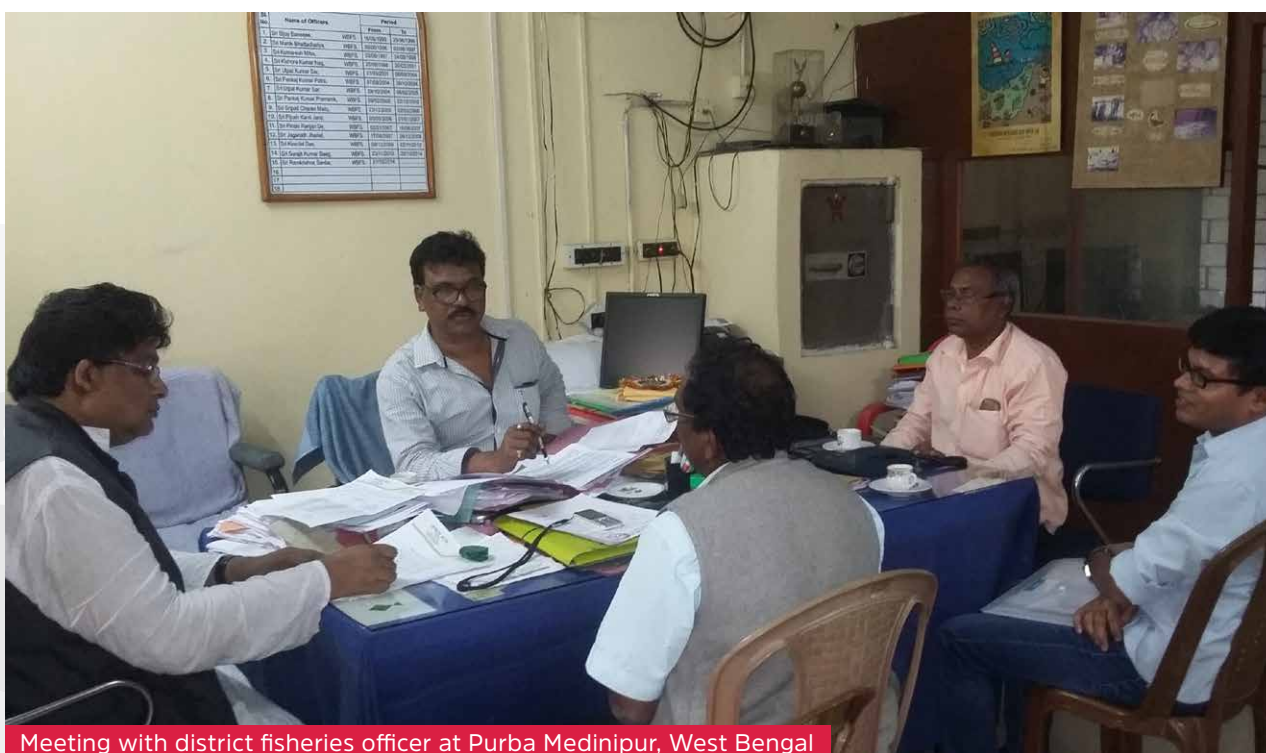
Fishing craft in Kerala



Fishing gears in Kerala



Fishing harbours in Kerala



Meeting with district fisheries officer at Purba Medinipur, West Bengal





Enumerator training, Andhra Pradesh



Poster in Gujarati

# All India Marine Fisheries CENSUS 2016

1<sup>st</sup> February – 1<sup>st</sup> March

Your wholehearted co-operation is  
solicited for the success of this venture.

Department. of Animal Husbandry, Dairying & Fisheries  
(Ministry of Agriculture & Farmers Welfare)  
Govt. of India, New Delhi

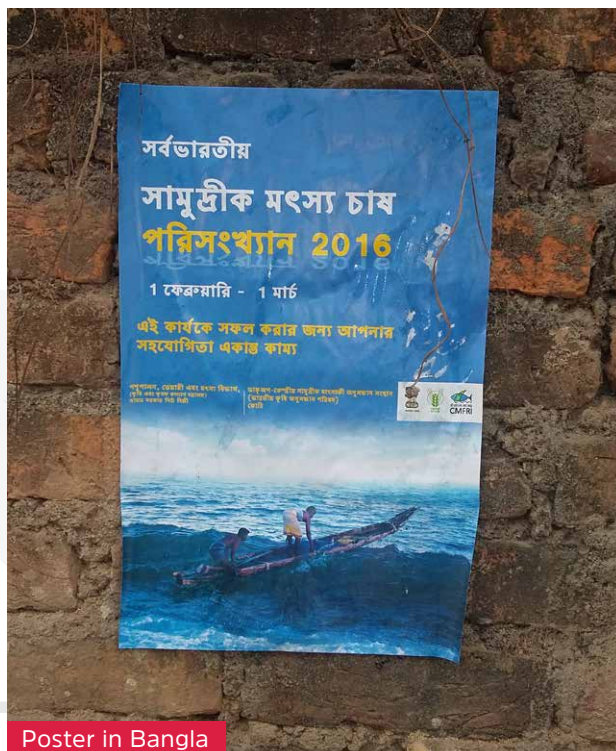
ICAR - Central Marine Fisheries Research Institute  
(Indian Council of Agricultural Research)  
Cochin



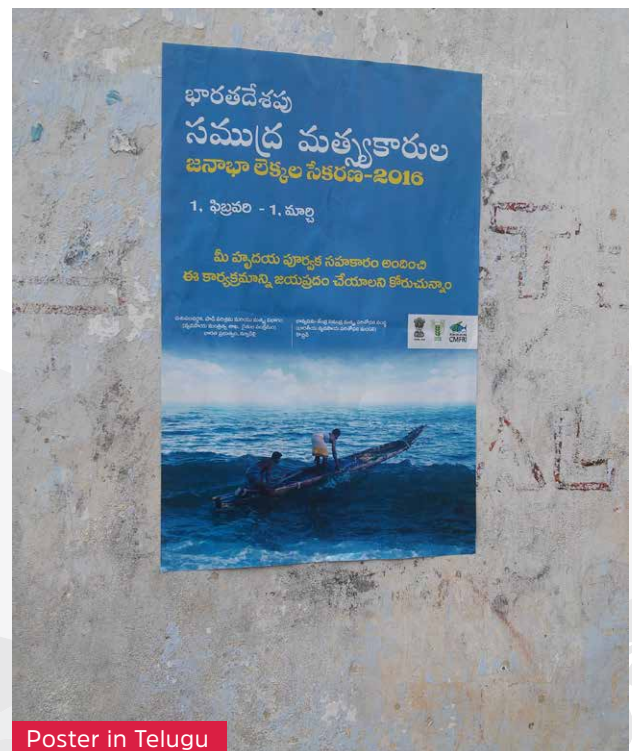




Poster in Marathi



Poster in Bangla



Poster in Telugu





Marine fishing village at Purba Medinipur, West Bengal



Marine fishing village at Purba Medinipur, West Bengal









State level supervision in West Bengal



Supervising enumerator East Godavari, Andhra Pradesh









Supervising enumerator at Purba Medinipur district in West Bengal



Supervising enumerator in Tamil Nadu



Supervisor training in Chennai

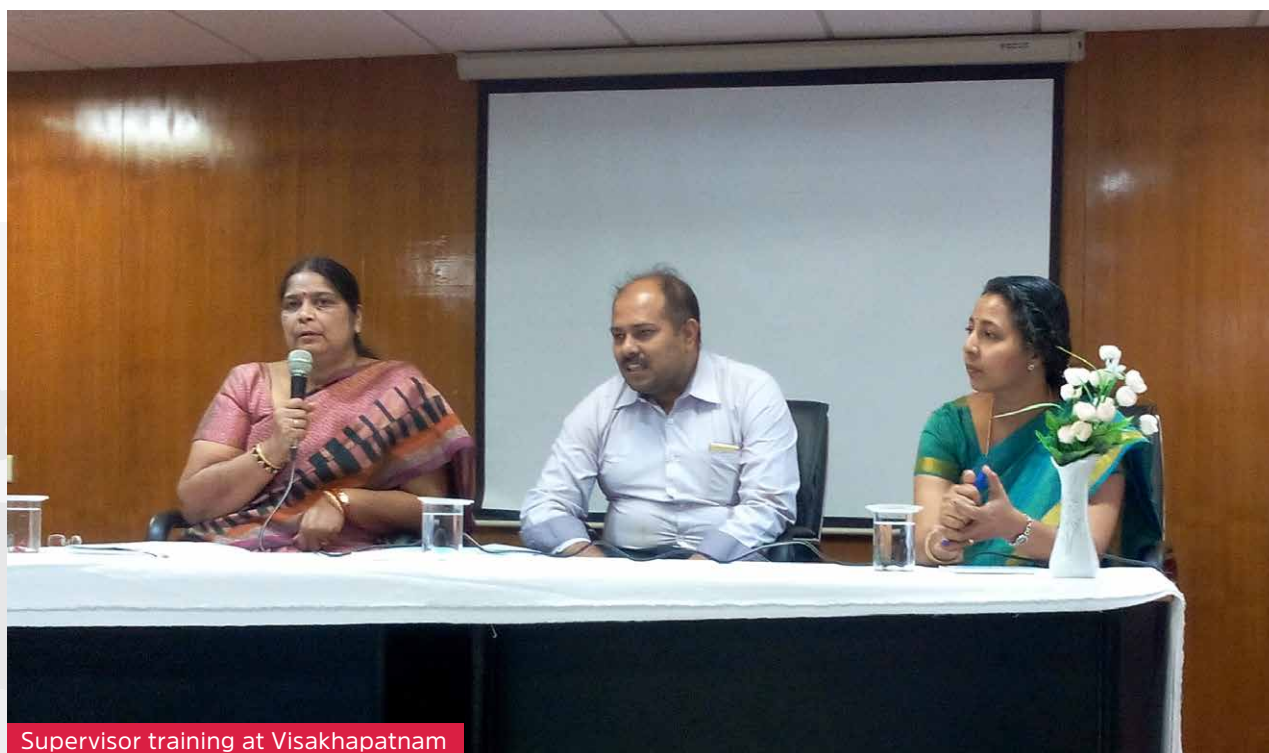


Supervisor training at Kochi





Supervisor training at Kochi



Supervisor training at Visakhapatnam



Supervisor training at Visakhapatnam







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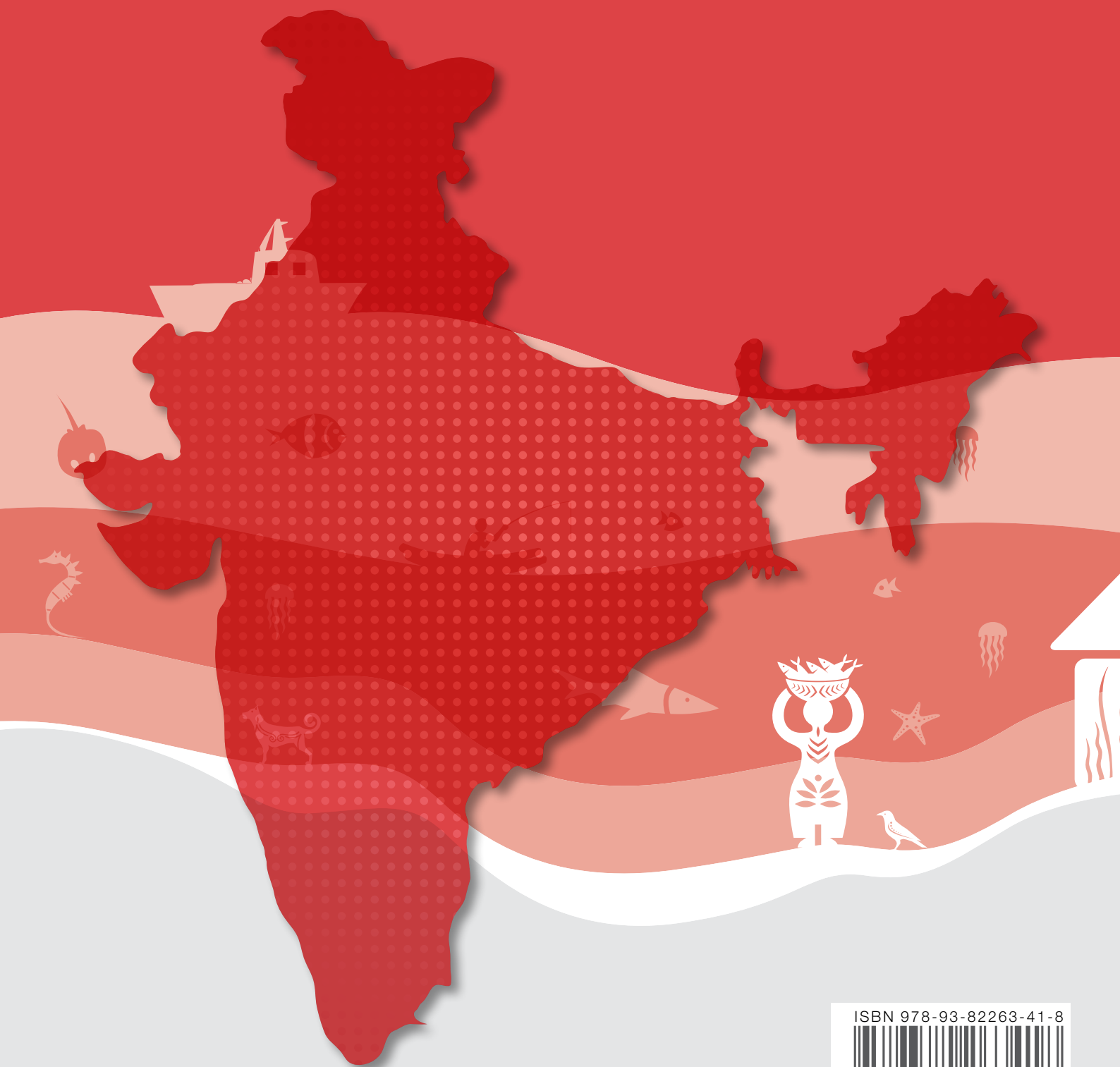
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